COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Piedmont Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

ALCOA – Richmond Foil Plant - South
7th and Bainbridge Streets, Richmond, Virginia
Permit No. PRO50534

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, ALCOA has applied for a Title V Operating Permit for its aluminum foil plant and rotogravure printing facility located at 7th and Bainbridge Streets, Richmond, Virginia. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact:_____ Date:

Air Permit Manager:_____ Date:

Regional Deputy Director:_____Date:

FACILITY INFORMATION

Permittee
ALCOA
P.O. Box 24688
Richmond, VA 23224-0688

Facility
Reynolds Metal Company
Richmond Foil Plant South
7th & Bainbridge Streets
Richmond, VA 23224-0688

County-Plant Identification Number: 51-760-0002

SOURCE DESCRIPTION

NAICS Code: [3353] - The Richmond Foil Plant produces aluminum foil and converts aluminum foil into various products (i.e. confection wraps & etc.).

Foil Rolling Process: This process primarily reduces the thickness of the input coils by putting them through high speed mills under high pressure. During this process, approximately three to four passes of the coil is made through the mills depending on what type of product is produced. As the aluminum is rolled or passed through the mill, the aluminum becomes thinner and harder due to working with the foil. As a result, the aluminum has to be heated in annealing ovens to make it pliable or soft enough for further rolling to occur. The coils of aluminum are usually annealed twice, once when they first arrive at the foil plant, and again prior to the final packaging.

One of the final passes of the process occurs when the foil becomes so thin that in order to ensure a uniform thickness two rolls are stacked together and passed the rolling mill. The resulting large coil is then slit to width for the various foil products. This is performed by mounting the doubled coil on a machine called a separator-slitter. Then a set of revolving blades make a continuous lengthwise cut through both sheets of foil, then the doubled foil sheets are separated and spooled into individual cores. The spooled foil typically undergoes a final annealing prior to converting within the facility or packaging for shipment to customers.

Foil Converting Process: This process laminates the foil by adhering tissue, paper or polymer substrates to the foil along with performing graphic arts printing (packaging printing) on the resulting substrate. The resultant converted foil products may then be slit to width and spooled, cut into sheets or left "as is" before being packaged and shipped to customers.

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, was conducted on March 3, 2005. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following :

Each of the units listed in the significant emissions units table **(under section II of the Title V permit)** as listed below are regulated in each of the NSR permits as noted in the following table along with the respective RACT agreements. The listing of applicable requirements follows this table:

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
Fuel Burning Equipment							
001A	001	National Boiler MB-613	3.34 MMBtu/hr	-	-	-	Grand-fathered
001B	001	Cyclotherm Boiler 300L-L2-43	10.0 MMBtu/hr	-	-	-	Grand-fathered
002	002	Keeler Boiler DK 9-8	25.1 MMBtu/hr	-	-	-	Grand-fathered
Process Equipment							

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
004	004	4-12, 16-20 Annealing Ovens #4 Annealing Oven #5 Annealing Oven #6 Annealing Oven #9 Annealing Oven #12 Annealing Oven #16 Annealing Oven #17 Annealing Oven #18 Annealing Oven #19 Annealing Oven #20 Annealing Oven	15 ton/batch 25 ton/batch 25 ton/batch 42.5 ton/batch 65 ton/batch 20 ton/batch 20 ton/batch 20 ton/batch 175 ton/batch 125 ton/batch	-	-	-	Exempt* (No. 4) Grand-fathered (Nos. 5, 6, 9, 12, 19 and 20) Exempt (electric) (Nos. 16 – 18)

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
005	005	E-H, J, K, 202-204, 206-211 Rolling Mill E Rolling Mill F Rolling Mill G Rolling Mill H Rolling Mill J Rolling Mill K Rolling Mill 202 Rolling Mill 203 Rolling Mill 204 Rolling Mill 206 Rolling Mill 207 Rolling Mill 208 Rolling Mill 209 Rolling Mill 211	2,860 ft/min 2,535 ft/min 3,000 ft/min 2,485 ft/min 4,660 ft/min 4,470 ft/min 2,535 ft/min 1,815 ft/min 2,215 ft/min 3,380 ft/min 1,995 ft/min 1,610 ft/min 2,255 ft/min 2,255 ft/min	-	-	-	DSE-597-87 RACT 11/14/01 NSR Permit for H Rolling Mill
020	007	Rolling Mill L	7,500 ft/min	-	-	-	11/14/01 NSR Permit

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
007	006	#22 Foil Annealing Oven associated natural gas burner	42.5 ton/batch 4.0 mmbtu/hr	-	-	-	DSE-976-84 11/15/84 NSR Permit
023	008	#23 Annealing Oven Associated natural gas burner	42.5 ton/batch 5.0 mmbtu/hr	-	-	-	4/2/02 NSR Permit

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
024	009	Gravure Printing – Includes the following: Cigarette Machine #1 Cigarette Machine #2 Cigarette Machine #3 Coloring Machine #1 – when not exhausted to the oxidizer Coloring Machine #2 – when not exhausted to the oxidizer Coloring Machine #6 – when not exhausted to the oxidizer Coloring Machine #4 Coloring Machine #7	 1,100 ft/min 1,000 ft/min 1,270 ft/min 700 ft/min 610 ft/min 700 ft/min 1,000 ft/min 700 ft/min 350 ft/min	-	-	-	DSE-414A-86 RACT DSE-412A-86 RACT

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
025	010	Coloring Machine #1 – when exhausted to the oxidizer Coloring Machine #2 – when exhausted to the oxidizer Coloring Machine #6 – when exhausted to the oxidizer Glue Mounter #24 – when exhausted to the oxidizer	700 ft/min 610 ft/min 700 ft/min 1,000 ft/min	ARI – Catalytic Oxidizer	CD001	VOC	DSE-414A-86 RACT DSE-412A-86 RACT
026	011	Reyseal Machine #1 (Manufactured by Genik)	1,200 ft/min	-	-	-	4/2/02 NSR Permit
027	016	#21 Annealing Oven associated 16.5 mmbtu/hr fuel burner	182.5 ton/batch	Surface Combustion – Thermal Oxidizer	CD002	VOC	8/4/95 NSR Permit
028	013	Miscellaneous Cleaning & Lubricating	Fugitive. No maximum rated capacity.	-	-	-	Grand-fathered

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date
029	014	Cigarette Machine #5 (consisting of one rotogravure/coating station and one laminating station, with a web width of 53 inches)	700 ft/min	-	-	-	11/14/01 NSR Permit
030	015	Ink Room Mixing	Fugitive. No maximum rated capacity	-	-	-	Included in with the respective printing line emissions
031	017	Annealing Oven #13 Associated fuel burner Annealing Oven #14 Associated fuel burner	92.5 ton/batch 8.0 mmbtu/hr 92.5 ton/batch 8.0 mmbtu/hr	Surface Combustion – Thermal Oxidizer	CD003	VOC	11/14/01 NSR Permit
I12		Wax 1 Above-ground Storage Tank Wax 2 Above-ground Storage Tank	12,500 gallons 12,500 gallons	-	-	-	Exempt**

*: In 1974, Virginia State Air Pollution Control Board (SAPCB) regulations did not regulate VOC emissions; therefore, this

oven was exempt from permitting requirements.

**: Permit exemption level for Volatile organic compound storage operations; any tank of 40,000 gallons or less storage capacity.

EMISSIONS INVENTORY

A copy of the 2006 annual emission update is attached. Emissions are summarized in the following tables.

This section consists of two tables summarizing:

1. *the actual annual emission of criteria pollutants*
2. *the actual annual emission of hazardous air pollutants*

Actual emission data is from the annual emission update, or the application.

2005 Actual Emissions

	2005 Criteria Pollutant Emission in Tons/Year				
Emission Unit	VOC	CO	SO_2	PM_{10}	NO_x
National & Cyclotherm Boiler	0	0	0	0	0
Keeler Boiler DK 9-8	.029	.736	10.45	.143	2.94
Annealing Ovens 4-12, 16-20	6.143	10.4	6.14	.944	12.43
Foil Mills E, H, J, K 202-204, 206-211	1425.58	0	0	0	0
Annealing Oven 22	2.73	0	0	0	0
Foil Mill L 23	119.533	0	0	0	0
Annealing Oven 23	2.79	0	0	0	0
Gravure Printing	45.2	2.69	.02	.243	3.20
Press 1,2,6,24	173.25	0	0	0	0
Wax Laminators	0	0	0	0	0
Misc.	18.28	0	0	0	0

Cleaning & Lubricating					
Cigarette Machine #5	2.42	0	0	0	0
Ink Room Mixing	7.13	0	0	0	0
Annealing Oven 21	6.86	.344	0	.002	.410
Ovens 13-14 Afterburner	1.05	0	.005	.06	.823
Total	**1811.02**	**15.655**	**10.56**	**1.49**	**20.7**

There are no HAP emissions associated with this plant.

EMISSION UNIT APPLICABLE REQUIREMENTS - [emission unit or units]

The applicable requirements from Article 8 (Emission Standards for Fuel Burning Equipment (Rule 4-8)) for the 3.34 mmbtu/hr National Boiler MB-613, the 10.0 mmbtu/hr Cyclotherm Boiler 300L-L2-43, and the 25.1 mmbtu/hr Keeler Boiler DK 9-8, (emission unit ID#s 001A, 001B and 002 (respectively)).

A. Limitations

1. Emissions from the operation of the 3.34 mmbtu/hr National Boiler MB-613, the 10.0 mmbtu/hr Cyclotherm Boiler 300L-L2-43, and the 25.1 mmbtu/hr Keeler Boiler DK 9-8 (emission unit ID#s 001A, 001B and 002) shall not exceed the limits specified below:

   001A (3.34 mmbtu/hr)
   PM-10
   $1.0906(3.34+10+25.1)^{-0.2594}$ = 0.42 lbs/mmbtu

   Sulfur Dioxide
   2.64 lbs/mmbtu

   001B (10.0 mmbtu/hr)
   PM-10
   $1.0906(3.34+10+25.1)^{-0.2594}$ = 0.42 lbs/mmbtu

   Sulfur Dioxide
   2.64 lbs/mmbtu

   002 (25.1 mmbtu/hr)
   PM-10
   $1.0906(3.34+10+25.1)^{-0.2594}$ = 0.42 lbs/mmbtu

Sulfur Dioxide
2.64 lbs/mmbtu

(9 VAC 5-40-900, 9 VAC 5-40-930 and 9 VAC 5-80-110)

2. Visible emissions from each of the 3.34 mmbtu/hr National Boiler MB-613, the 10.0 mmbtu/hr Cyclotherm Boiler 300L-L2-43, and the 25.1 mmbtu/hr Keeler Boiler DK 9-8 (emission unit ID #s 001A, 001B, and 002) shall not exceed 20 percent opacity except for one six-minute period in any one hour of not more than 60 percent opacity. Failure to meet the preceding requirements because of the presence of water vapor shall not be a violation of these requirements.

   (9 VAC 5-40-940 and 9 VAC 5-80-110 B. of State Regulations)

Periodic Monitoring for the 3.34 mmbtu/hr National Boiler MB-613, the 10.0 mmbtu/hr Cyclotherm Boiler 300L-L2-43, and the 25.1 mmbtu/hr Keeler Boiler DK 9-8 (emission unit ID #s 001A, 001B, and 002).

The EPA periodic monitoring guidance, dated September 18, 1998, indicates on page 4 that periodic monitoring is required for each emission point at a source, subject to Title V of the Act, that is subject to an applicable requirement. The information listed below describes the periodic monitoring requirements for all of the applicable requirements for significant sources to ensure that the periodic monitoring requirements of 9 VAC 5-80-110 E.2. have been met.

Limitation:

1. Emissions from the operation of the 3.34 mmbtu/hr National Boiler MB-613, the 10.0 mmbtu/hr Cyclotherm Boiler 300L-L2-43, and the 25.1 mmbtu/hr Keeler Boiler DK 9-8 (emission unit ID #s 001A, 001B, and 002) shall not exceed the limits specified below:

   001A (3.34 mmbtu/hr)
   PM-10
   $1.0906(H)^{-0.2594}$ = 0.42 lbs/mmbtu

   Total Capacity (H) =3.34+10+25.1

   Sulfur Dioxide
   2.64 lbs/mmbtu

   001B (10.0 mmbtu/hr)
   PM-10
   $1.0906(H)^{-0.2594}$ = 0.42 lbs/mmbtu

   Total Capacity (H) = 3.34+10+25.1

   Sulfur Dioxide
   2.64 lbs/mmbtu

002 (25.1 mmbtu/hr)
PM-10
$1.0906(H)^{-0.2594}$ = 0.42 lbs/mmbtu

Total Capacity(H) = 3.34+10+25.1

Sulfur Dioxide
2.64 lbs/mmbtu

(9 VAC 5-40-900, 9 VAC 5-40-930 and 9 VAC 5-80-110)

Parameter:

A. Ensuring the emission standard for particulate matter for fuel burning equipment installations and fuel burning equipment units are being met.

Fuel burning equipment installations are defined as the following:
Means all fuel burning equipment units within a stationary source in operation prior to October 5, 1979.
The emission ratio (E) equation which applies to the fuel burning equipment installations and units includes the variable (H) for "total capacity" which is defined as the following:

Means with reference to a fuel burning equipment installation, the sum of the rated capacities (expressed as heat input – total gross calorific value of all fuels burned) of all units of the installation which must be operated simultaneously under conditions of 100% use load.

The emission standard for particulate matter includes two standards one for the maximum allowable particulate emissions standard (when operating at rated capacity) and one for the allowable particulate emissions (when operating at less than the rated capacity which is based on the actual heat content).

B. Ensuring the emission standard for sulfur dioxide for fuel burning equipment installations is being met.

Monitoring and Recordkeeping: Monitoring and recordkeeping will be as according to the following:

[Note: "Used oil" as stated in the periodic monitoring is the food grade oil (Normal paraffin lubricant containing a minimum of 88 percent saturated aliphatic compounds of carbon range C12 and above) which is used in the aluminum rolling mills. Since it is food grade oil it was surmised a high sulfur content would not be wanted in the oil since the foil could be used against food or for with packaging with medicines and etc. This is consistent with information provided by Reynolds Metals which states the following:

"Manufacturer specifications for the normal paraffin lubricant and additives indicate a maximum sulfur content range of 5 ppm to 7 ppm which would more than meet the 2.64 lbs of SO2/mmbtu".

In addition, data on the heat content of the used oil shows the used oil to be 18,000 to 20,000

Btu/pound of oil. If the btu/pound was multiplied by the density of water of 8.34 lbs/gal, the food grade used oil would result in a heat content of 150,120 btu/gal of which would be close to #6 fuel oil heat content. If the heat content is approximately the same as #6 fuel oil, it again would more than meet the 0.42 lbs of particulate/mmbtu.]

2. Records shall be maintained of all oils which are burned in the 3.34 mmbtu/hr National Boiler MB-613, 10.0 mmbtu/hr Cyclotherm Boiler 300L-L2-43, and the 25.1 mmbtu/hr Keeler Boiler DK 9-8 (emission unit ID #s 001A, 001B, and 002) along with the heat content and sulfur content of purchased oil and heat content of used oil combusted.

   (9 VAC 5-80-110 E. and F. of State Regulations)

3. The heat content of each oil burned in the 3.34 mmbtu/hr National Boiler MB-613, 10.0 mmbtu/hr Cyclotherm Boiler 300L-L2-43, and 25.1 mmbtu/hr Keeler Boiler DK 9-8 (emission unit ID #s 001A, 001B, and 002) shall be inserted into one of the following respective equations, unless the heat content of each oil is documented to be above the respective oils listed (i.e. distillate (#1 ≥ 134,000 Btu/gal and #2 ≥ 138,000 Btu/gal), #4 residual oil ≥ 144,000 Btu/gal, #5 residual oil ≥ 146,000 Btu/gal, #6 residual oil ≥ 150,000 Btu/gal and used oil ≥ 150,000 Btu/gal). If the respective oil's heat content is above the previously listed heat contents, it will be presumed the fuel burning equipment is in compliance with the allowable particulate emissions for each fuel burning equipment unit when operating at less than rated capacity as according to 9 VAC 5-40-900 B.2 of the State Regulations :

   Distillate fuel oil:
   PM_{10} Emission Factor= 2 * lb of PM_{10}/thousand gals x (1 thousand gals/1,000 gal.) = 0.002 lb of PM_{10}/gal

   No. 4 fuel oil:
   PM_{10} Emission Factor = 7 * lb of PM_{10}/thousand gals x (1 thousand gals/1,000 gal.) = 0.007 lb of PM_{10}/gal

   No. 5 fuel oil:
   PM_{10} Emission Factor =9.19(%S)+3.22* = A lb of PM_{10}/thousand gals x (1 thousand gals/1,000 gal.) = B lb of PM_{10}/gal

   No. 6 fuel oil:
   PM_{10} Emission Factor= 10 * lb of PM_{10}/thousand gals x (1 thousand gals/1,000 gal.) = 0.010 lb of PM_{10}/gal

   Used oil:
   PM_{10} Emission Factor= 10 * lb of PM_{10}/thousand gals x (1 thousand gals/1,000 gal.) = 0.010 lb of PM_{10}/gal

   *: Or current EPA, AP-42 emission factor.

   Distillate fuel oil:
   1 gal/heat content of fuel (MMBtu) X 0.002 lb of PM_{10}/gal = C lb of PM_{10}/MMBtu

   No. 4 fuel oil:
   1 gal/heat content of fuel (MMBtu) X 0.007 lb of PM_{10}/gal = C lb of

PM_{10}/MMBtu

No. 5 fuel oil:
1 gal/heat content of fuel (MMBtu) X B lb of PM_{10}/gal = C lb of PM_{10}/MMBtu

No. 6 fuel oil:
1 gal/heat content of fuel (MMBtu) X 0.010 lb of PM_{10}/gal = C lb of PM_{10}/MMBtu

Used oil:
1 gal/heat content of fuel (MMBtu) X 0.010 lb of PM_{10}/gal = C lb of PM_{10}/MMBtu

(9 VAC 5-80-110 E. and K. of State Regulations)

4. The sulfur content as per supplier certification of each oil burned shall be inserted into one of the following respective equations, unless the sulfur content is ≤ 2.5%. If the sulfur content is ≤ 2.5%, it is presumed to be in compliance:

Distillate fuel oil:

142(%S)* = A lb of SO_2/thousand gals x (1 thousand gals/1,000 gal.) = B lb of SO_2 /gal

No. 4 fuel oil

150 (%S)* = A lb of SO_2/thousand gals x (1 thousand gals/1,000 gal.) = B lb of SO_2/gal

No. 5 or No. 6 fuel oil

157(%S)* = A lb of SO_2/thousand gals x (1 thousand gals/1,000 gal.) = B lb of SO_2/gal

*: Or current EPA, AP-42 emission factor.
(9 VAC 5-80-110 E. and K. of State Regulations)

5. The heat content of each oil as per supplier certification which are burned in the 3.34 mmbtu/hr National Boiler MB-613, 10.0 mmbtu/hr Cyclotherm Boiler 300L-L2-43, and 25.1 mmbtu/hr Keeler Boiler DK 9-8 (emission unit ID #s 001A, 001B, and 002) the results from the respective equation from condition no. 4 shall be inserted into one of the following respective equations to determine compliance with the fuel burning SO_2 standard, unless the sulfur content is ≤ 2.5%. If the sulfur content is ≤ 2.5%, it will be presumed to be in compliance:

Distillate or the use of No. 4 or No. 5 or No. 6 fuel oil:

1 gal/heat content of fuel (MMBtu) X B lb of SO_2/gal = C lb of SO_2 /MMBtu

(9 VAC 5-80-110 E. and K. of State Regulations)

Limitation: Visible emissions from each of the following 3.34 mmbtu/hr National Boiler MB-613, 10.0 mmbtu/hr Cyclotherm Boiler 300L-L2-43, and 25.1 mmbtu/hr Keeler Boiler DK 9-8 (emission unit ID #s 001A, 001B, and 002) shall not exceed 20 percent opacity except for one six-minute period in any one hour of not more than 60 percent opacity. Failure to meet the preceding requirements because of the presence of water vapor shall not be a violation of these requirements. **Parameter:** Ensuring the fuel burning equipment standard for visible emissions (9 VAC 5-40-940) is being met. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be as according to the following:

The emissions from each of the following 3.34 mmbtu/hr National Boiler MB-613, 10.0 mmbtu/hr Cyclotherm Boiler 300L-L2-43, and 25.1 mmbtu/hr Keeler Boiler DK 9-8 (emission unit ID #s 001A, 001B, and 002) shall be observed visually at least once each calendar month [except when burning residual (Nos. 4, 5, or 6) oil which shall be increased to weekly evaluations] for at least a brief time period during normal operations to determine if there are normal visible emissions being met (does not include condensed water vapor/steam), unless a 40 CFR 60 Appendix A Method 9 visible emissions evaluation is performed on the emissions unit. Each emissions unit observed having above normal visible emissions shall be followed up with a 40 CFR 60 Appendix A Method 9 visible emissions evaluation unless the visible emission condition is corrected as expeditiously as possible and recorded, and the cause and corrective measures taken are recorded. If a boiler(s) (emission unit ID#s 001A, 001B, and 002) is/are not operated during the calendar month, then no visible emission needs to be performed along with records documenting the boiler(s) were not operated during the calendar month.

(9 VAC 5-80-110 E and F)

Permit Dated November 14, 2001 for the "L" rolling mill and the "#13 and #14" annealing ovens - The applicable requirements from the permit conditions are listed below.

1. **Emission Controls** - Rolling oil temperature monitors and recorders are to be installed on the "H" (part of emission unit ID # 005) and "L" (emission unit ID # 020) mills in the oil supply line to the sprays. Rolling oil temperature shall be controlled and regulated to a maximum of 145 ^{o}F in the spray manifold at each mill.

   (9 VAC 5-80-110 and Condition 3 of 11/14/01 Permit)

2. **Emission Controls and Control Efficiency** - Particulate volatile organic compound (VOC) emissions (mist) at the "L" (emission unit ID #020) mill shall be controlled by an inertial impactor designed to collect 90% of the hydrocarbon droplets.

   (9 VAC 5-80-110 and Condition 4 of 11/14/01 Permit)

3. **Emission Controls and Control Efficiency** - VOC emissions from the #13 and #14 ovens (emission unit ID # 031) shall be controlled by a direct-flame afterburner with at least 90% destruction efficiency. The afterburner shall be provided with adequate access for inspection.

   (9 VAC 5-80-110 and Condition 5 of 11/14/01 Permit)

4. **Capture Efficiency and Monitoring** - The #13 and #14 (emission unit ID # 031) annealing ovens afterburner shall have a capture efficiency of at least 95%. The afterburner shall maintain a minimum combustion zone temperature of 1400 degrees

Fahrenheit and a minimum residence time of 0.5 seconds. The afterburner shall be equipped with a device to continuously measure the temperature of the combustion zone.

(9 VAC 5-80-110 and Condition 6 of 11/14/01 Permit)

5. **Consumption** - The #13 & #14 (emission unit ID # 031) annealing ovens afterburner shall consume no more than 61.3 million ft^3 natural gas per year, calculated as the sum of each consecutive 12 month period.

   (9 VAC 5-80-110 and Condition 7 of 11/14/01 Permit)

6. **Consumption** - The #13 (part of emission unit ID # 031) annealing oven fuel burner shall consume no more than 70 million ft^3 natural gas and 779 thousand gallons propane per year, calculated as the sum of each consecutive 12 month period.

   (9 VAC 5-80-110 and Condition 8 of 11/14/01 Permit)

7. **Consumption** - The #14 (part of emission unit ID # 031) annealing oven fuel burner shall consume no more than 70 million ft^3 natural gas and 779 thousand gallons propane per year, calculated as the sum of each consecutive 12 month period.

   (9 VAC 5-80-110 and Condition 9 of 11/14/01 Permit)

8. **Consumption** - The annual consumption of VOC in #13 and #14 (emission unit ID # 031) annealing ovens shall not exceed 85.0 tons/yr, calculated as the sum of each consecutive 12 month period.

   (9 VAC 5-80-110 and Condition 10 of 11/14/01 Permit)

9. **Fuel** - The approved fuel for the direct-flame afterburner is natural gas. A change in the fuel may require a permit to modify and operate.

   (9 VAC 5-80-110 and Condition 11 of 11/14/01 Permit)

10. **Fuel** - The approved fuels for the #13 and #14 (emission unit ID # 031) annealing oven fuel burners are natural gas and propane. A change in the fuels may require a permit to modify and operate.

    (9 VAC 5-80-110 and Condition 12 of 11/14/01 Permit)

11. **Emission Limits** - Emissions from the #13 and #14 (emission unit ID # 031) annealing ovens afterburner stack shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)	0.7 lbs/hr	3.1 tons/yr*
Carbon Monoxide	0.2 lbs/hr	0.7 tons/yr*
Volatile Organic Compounds	22.1 lbs/hr	8.4 tons/yr*

*Annual emissions shall be determined monthly as the sum of each consecutive 12 month period.

(9 VAC 5-80-110, 9 VAC 5-50-260 and Condition 13 of 11/14/01 Permit)

12. **Emission Limits** - Fugitive emissions from the operation of the #13 and #14 (emission unit ID # 031) annealing ovens shall not exceed the limits specified below:

Volatile Organic Compounds	11.6 lbs/hr	4.3 tons/yr*

*Annual emissions shall be determined monthly as the sum of each consecutive 12 month period.

(9 VAC 5-80-110, 9 VAC 5-50-260 and Condition 14 of 11/14/01 Permit)

13. **Emission Limits** - Emissions from the #13 (part of emission unit ID # 031) annealing oven fuel burner shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)	1.3 lbs/hr	5.5 tons/yr*
Carbon Monoxide	0.2 lbs/hr	0.8 tons/yr*

*Annual emissions shall be determined monthly as the sum of each consecutive 12 month period.

(9 VAC 5-80-110, 9 VAC 5-50-260 and Condition 15 of 11/14/01 Permit)

14. **Emission Limits** - Emissions from the #14 (part of emission unit ID # 031) fuel burner shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)	1.3 lbs/hr	5.5 tons/yr*
Carbon Monoxide	0.2 lbs/hr	0.8 tons/yr*

*Annual emissions shall be determined monthly as the sum of each consecutive 12 month period.

(9 VAC 5-80-110, 9 VAC 5-50-260 and Condition 16 of 11/14/01 Permit)

15. **Emission Limits** - Total emissions from the operation of the "L" (part of emission unit ID # 020) mill shall not exceed the limits specified below:

Volatile Organic Compounds	74.0 lbs/hr	146.0 tons/yr*

*Annual emissions shall be determined by purchase records of all rolling lubricants along with performance of a material balance.

(9 VAC 5-80-110, 9 VAC 5-50-260 and Condition 17 of 11/14/01 Permit)

16. **Emission Limits** - Total emissions from the operation of the "H" (part of emission unit ID # 005) mill shall not exceed the limits specified below:

Volatile Organic		

Compounds	58.3 lbs/hr	92.0 tons/yr*

*Annual emissions shall be determined by purchase records of all rolling lubricants along with performance of a material balance.

(9 VAC 5-80-110, 9 VAC 5-50-260 and Condition 18 of 11/14/01 Permit)

17. **Visible Emission Limit** - Visible emissions from the #13 and #14 (emission unit ID # 031) annealing ovens afterburner shall not exceed 20 percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A).
(9 VAC 5-50-80, 9 VAC 5-80-110 and Condition 19 of 11/14/01 Permit)

Periodic Monitoring for the "L" (emission unit ID # 020) mill aluminum foil rolling mill, "H" (part of emission unit ID # 005) mill aluminum foil rolling mill, #13 annealing oven and associated fuel burner and #14 annealing oven and associated fuel burner and direct flame afterburner (emission unit ID # 031).

The EPA periodic monitoring guidance, dated September 18, 1998, indicates on page 4 that periodic monitoring is required for each emission point at a source, subject to Title V of the Act, that is subject to an applicable requirement. The information listed below describes the periodic monitoring requirements for all of the applicable requirements for significant sources in the NSR permit issued on November 14, 2001. The requirements are generally contained in the permit issued on November 14, 2001 but some conditions have been developed to ensure that the periodic monitoring requirements of 9 VAC 5-80-110 E.2. have been met.

Condition 3 of the November 14, 2001 NSR permit:

Limitation: Emission Controls - Rolling oil temperature monitors and recorders are to be installed on the "H" (part of emission unit ID #005) and "L" (emission unit ID #020) mills in the oil supply line to the sprays. **Rolling oil temperature shall be controlled and regulated to a maximum of 145^{o}F in the spray manifold at each mill (part of emission unit ID #005 and emission unit ID #020). Parameter:** Ensuring the rolling oil temperature does not exceed 145^{o}F at each mill. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be as according to the following:

The rolling oil temperature recorder shall be reviewed to determine if it is in compliance with the required 145 ^{o}F maximum temperature in the spray manifold at each (part of emission unit ID #005 and emission unit ID #020) mill and recorded once per day noting if the temperature was in compliance or not. If the temperature was found not to be in compliance, records shall be kept of the measures which were performed to correct it along with the time and date of the corrective action.
(9 VAC 5-80-110 E and F)

Condition 4 of the November 14, 2001 NSR permit:

Limitation: Emission Controls and Control Efficiency - Particulate volatile organic compound (VOC) emissions (mist) at the "L" (emission unit ID #020) mill shall be controlled by an inertial impactor **designed to collect 90% of the hydrocarbon droplets**. **Parameter:** Determine if 90%

of the hydrocarbon droplets are being collected. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be as according to the following:

"The amperage of the exhaust fan associated with the inertial impactor shall be recorded once per day to demonstrate the inertial impactor is operating in compliance with the 90% collection efficiency of the hydrocarbon droplets by maintaining at minimum 50 motor amps (per LEG)."

*: The 50 motor amps (per LEG) is as per the manufacturer of the unit.

Condition 5 of the November 14, 2001 NSR permit:

Limitation: Emission Controls and Control Efficiency - VOC emissions from the #13 and #14 ovens (emission unit ID #031) shall be controlled by a direct-flame afterburner **with at least 90% destruction efficiency**. The afterburner shall be provided with adequate access for inspection. **Parameter:** Determine if 90% of the VOC emissions are being destroyed. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be as according to the following to ensure the proper combustion (destruction) temperature would be maintained:

The #13 and #14 (emission unit ID # 031) annealing ovens afterburner combustion zone temperature shall be monitored through an alarm system located on the afterburner operation control panel which has a set point temperature of 1425^{o}F. If the temperature alarm sounds, this indicates the afterburner's combustion zone temperature is below 1425^{o}F. Records will be kept of the date and time that the temperature alarm sounds and of the immediate corrective action taken.
(9 VAC 5-80-110 E and F)

Condition no. 6 has a minimum combustion temperature requirement of 1400^{o}F and a residence time of 0.5 seconds which will ensure the destruction efficiency is being met. Along with this requirement, ALCOA – South Foil Plant is required to have a device to continuously measure the temperature in the combustion zone. This unit's destruction efficiency was previously tested in an initial performance test and was found to significantly exceed the required 90% in condition no. 5.) The overall destruction efficiency was determined to be 98.74% based on an oven temperature of 1448^{o}F - 1451^{o}F. In addition, the following additional periodic monitoring requirement was added to ensure this destruction efficiency would continue to be met:

An annual calibration shall be performed on the current thermocouples for the afterburner for #13 and #14 (emission unit ID #031) annealing ovens in accordance with written procedures recommended by the thermocouple manufacturer and annual records stating the date the calibration was performed along with the calibration results.

Condition 6 of the November 14, 2001 NSR permit:

Limitation: Capture Efficiency and Monitoring - **The #13 and #14 (emission unit ID #031) annealing ovens afterburner shall have a capture efficiency of at least 95%. The afterburner shall maintain a combustion zone temperature of 1400 degrees Fahrenheit and a residence time of 0.5 seconds.** The afterburner shall be equipped with a device to continuously measure the temperature of the combustion zone. **Parameter:** Determine if the

capture efficiency of at least 95% is being met along with the minimum temperature of 1400 degrees Fahrenheit and a residence time of 0.5 seconds. **Monitoring and Recordkeeping:**

The annealing ovens are designed to be closed boxes with 100% capture efficiency. The permit states 95% capture efficiency in case there is 5% (at worst case) of the emissions lost as fugitive emissions due to wear on the oven's door seals. However, this is closely monitored as the annealing of aluminum foil is carried out in an inert (nitrogen) atmosphere to not have the presence of oxygen of which will discolor the foil. If the foil is discolored, this foil would have to be scrapped of which would add to the cost of the process. In addition, if the seals leak this only lengthens the required time to purge the oven of oxygen along with utilizing more costly nitrogen. As a result, the following monitoring and recordkeeping will be performed to ensure the capture efficiency of the oven:

The seals on the #13 and #14 (emission unit ID # 031) annealing ovens shall be inspected for defective seals quarterly and replaced or repaired on an as needed basis along with noting the date and time of any action and the result.
(9 VAC 5-80-110 E and F)

The following monitoring and recordkeeping was added to ensure the proper combustion (destruction) temperature would be maintained:

The #13 and #14 (emission unit ID # 031) annealing ovens afterburner combustion zone temperature will be monitored through an alarm system located on the afterburner operation control panel which has a set point temperature of 1425^{o}F. If the temperature alarm sounds, this indicates the afterburner's combustion zone temperature is below 1425^{o}F. Records will be kept of the date and time that the temperature alarm sounds and of the immediate corrective action taken.
(9 VAC 5-80-110 E and F)

The following is the rational for not having periodic monitoring for the 0.5 second residence time:

It was determined the monitoring for the minimum residence time of 0.5 second is already being met and will continue to be met. As the South Foil Plant has submitted information from the manufacturer which gave the specifications for the thermal oxidizer which was designed for 26,000 scfh with a residence time of 0.5 second. If the speed of the fan decreases and the chamber size remains constant the residence time will only increase which will only increase the amount of time for destruction of VOCs.

Condition 7 of the November 14, 2001 NSR permit:

Limitation: The #13 & #14 (emission unit ID #031) annealing ovens afterburner shall consume no more than 61.3 million ft^3 natural gas per year, calculated as the sum of each consecutive 12 month period. **Parameter:** Determine annual fuel usage as the sum of each consecutive 12 month period. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be performed monthly of the fuel usage and recordkeeping as according to the monitoring and recordkeeping, for condition no 20 d. of the November 14, 2001 NSR permit which states the following:

"The yearly throughput of natural gas to the #13 and #14 (emission unit ID #031) annealing ovens afterburner, calculated as the sum of each consecutive 12 month period."

Condition 8 of the November 14, 2001 NSR permit:

Limitation: Consumption - The #13 (part of emission unit ID #031) annealing oven fuel burner shall consume no more than 70 million ft^3 natural gas and 779 thousand gallons propane per year, calculated as the sum of each consecutive 12 month period. **Parameter:** Determine annual fuel usage as the sum of each consecutive 12 month period. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be performed monthly of the fuel usage and recordkeeping as according to the monitoring and recordkeeping, for condition no. 20 c. of the November 14, 2001 NSR permit.

"The yearly throughput of natural gas and propane to the #13 and #14 (emission unit ID #031) annealing ovens fuel burners, calculated as the sum of each consecutive 12 month period."

Condition 9 of the November 14, 2001 NSR permit:

Limitation: Consumption - The #14 (part of emission unit ID #031) annealing oven afterburner shall consume no more than 70 million ft^3 natural gas and 779 thousand gallons propane per year, calculated as the sum of each consecutive 12 month period. **Parameter:** Determine annual fuel usage as the sum of each consecutive 12 month period. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be performed monthly of the fuel usage as according to the monitoring and recordkeeping, for condition no. 20 c. of the November 14, 2001 NSR permit.

"The yearly throughput of natural gas and propane to the #13 and #14 (emission unit ID #031) annealing ovens fuel burners, calculated as the sum of each consecutive 12 month period."

Condition 10 of the November 14, 2001 NSR permit:

Limitation: Consumption - The annual consumption of VOC in #13 and #14 (emission unit ID #031) annealing ovens shall not exceed 85.0 tons/yr, calculated as the sum of each consecutive 12 month period. **Parameter:** Determine annual consumption of VOCs in #13 and #14 (emission unit ID #031) annealing ovens as the sum of each consecutive 12 month period. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be performed monthly by a material balance of the VOCs consumed as according to the monitoring and recordkeeping, for condition no. 20 b. of the November 14, 2001 NSR permit which state the following (respectively):

"The yearly consumption of VOC in the #13 and #14 (emission unit ID #031) annealing ovens (as determined by material balance), calculated as the sum of each consecutive 12 month period."

Condition 11 of the November 14, 2001 NSR permit:

Limitation: Fuel - The approved fuel for the direct-flame afterburner (for emission unit ID #031) is natural gas. A change in the fuel may require a permit to modify and operate. **Parameter:** Determine there has been no change in fuels to possibly a dirtier fuel. **Monitoring and**

Recordkeeping: Monitoring and recordkeeping will be as according to the monitoring and recordkeeping, for condition no. 20 d. of the November 14, 2001 NSR permit which states the following as it denotes the type of fuel being burned and how much fuel is burned.:

"The yearly throughput of natural gas to the #13 and #14 (emission unit ID #031) annealing ovens afterburner, calculated as the sum of each consecutive 12 month period."

In addition, the #13 and #14 (emission unit ID #031) annealing oven afterburner is configured to only burn natural gas. To make a change in fuel, the ovens would have to be reconfigured.

Condition 12 of the November 14, 2001 NSR permit:

Limitation: Fuel - The approved fuels for the #13 and #14 (emission unit ID #031) annealing oven fuel burners are natural gas and propane. A change in the fuels may require a permit to modify and operate. **Parameter:** Determine there has been no change in fuels to possibly a dirtier fuel. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be as according to the monitoring and recordkeeping, for condition no. 20 c. of the November 14, 2001 NSR permit which states the following:

"The yearly throughput of natural gas and propane to the #13 and #14 (emission unit ID # 031) annealing ovens' fuel burners, calculated as the sum of each consecutive 12 month period."

In addition, the #13 and #14 (emission unit ID #031) annealing oven fuel burner is configured to only burn natural gas. To make a change in fuel, the ovens would have to be reconfigured.

Condition 13 of the November 14, 2001 NSR permit:

Limitation: Emission Limits - Emissions from the #13 and #14 (emission unit ID #031) annealing ovens afterburner stack shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)	0.7 lbs/hr	3.1 tons/yr*
Carbon Monoxide	0.2 lbs/hr	0.7 tons/yr*
Volatile Organic Compounds	22.1 lbs/hr	8.4 tons/yr*

*Annual emissions shall be determined monthly as the sum of each consecutive 12 month period.

Parameter: Ensure the emission limits are not being exceeded. **Monitoring and Recordkeeping:** Monitoring and recordkeeping of the annual emission limits established for the #13 and #14 (emission unit ID #031) annealing ovens afterburner stack (emission unit ID #031) is based on the consumption of VOCs by the ovens along with the amount of throughput of foil which is charged and the natural gas fuel consumption by the afterburners on an annual basis over a twelve month consecutive basis of which is limited in terms of the annual VOC throughput limit of the permit and annual natural gas fuel consumption. Therefore, as long as the throughput limit is not violated, there should not be any possibility that the criteria pollutant emission limits should be violated. Recordkeeping demonstrating compliance with the annual throughput limits can be used to demonstrate compliance with the criteria pollutant emission limits, therefore the

throughput limits satisfy the periodic monitoring requirement for the emission limits and recordkeeping will be as according to the monitoring and recordkeeping, for condition nos. 7, 10, 20a., 20b., and 20d. of the November 14, 2001 NSR permit.

Condition 14 of the November 14, 2001 NSR permit:

Limitation: Emission Limits - Fugitive emissions from the operation of the #13 and #14 (emission unit ID #031) annealing ovens shall not exceed the limits specified below:

Volatile Organic Compounds	11.6 lbs/hr	4.3 tons/yr*

*Annual emissions shall be determined monthly as the sum of each consecutive 12 month period.

Parameter: Ensure the emission limits are not being exceeded. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be as according to the monitoring and recordkeeping, for condition nos. 10, 20a., and 20b. of the November 14, 2001 NSR permit.

Condition 15 of the November 14, 2001 NSR permit:

Limitation: Emission Limits - Emissions from the #13 (part of emission unit ID# 031) annealing oven fuel burner shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)	1.3 lbs/hr	5.5 tons/yr*
Carbon Monoxide	0.2 lbs/hr	0.8 tons/yr*

*Annual emissions shall be determined monthly as the sum of each consecutive 12 month period.

Parameter: Ensure the emission limits are not being exceeded. **Monitoring and Recordkeeping:** The annual emission limits established for criteria pollutants are based on the fuel throughput limit contained in the current NSR permit which is multiplied by an emission factor. Therefore, as long as the throughput limit is not violated, there is no possibility that the criteria pollutant emission limits will be violated. Recordkeeping demonstrating compliance with the throughput limit can be used to demonstrate compliance with the criteria pollutant emission limits, therefore throughput limits satisfy the periodic monitoring requirement. Monitoring and recordkeeping will be as according to the monitoring and recordkeeping, for condition nos. 8 and 20c of the November 14, 2001 NSR permit.

Condition 16 of the November 14, 2001 NSR permit:

Limitation: Emission Limits - Emissions from the #14 (emission unit ID #031) fuel burner shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)	1.3 lbs/hr	5.5 tons/yr*
Carbon Monoxide	0.2 lbs/hr	0.8 tons/yr*

*Annual emissions shall be determined monthly as the sum of each consecutive 12 month period.

Parameter: Ensure the emission limits are not being exceeded. **Monitoring and Recordkeeping:** The annual emission limits established for criteria pollutants are based on the fuel limit contained in the current NSR permit. Regarding these pollutants, the fuel throughput is the factor that determines emission rates. Therefore, as long as the throughput limit is not violated, there is no possibility that the criteria pollutant emission limits will be violated. Recordkeeping demonstrating compliance with the throughput limit can used to demonstrate compliance with the criteria pollutant emission limits, therefore throughput limits satisfy the periodic monitoring requirement. Monitoring and recordkeeping will be as according to the monitoring and recordkeeping, for condition nos. 9 and 20c. of the November 14, 2001 NSR permit.

Condition 17 of the November 14, 2001 NSR permit:

Limitation: Emission Limits - Total emissions from the operation of the "L" (emission unit ID #020) mill shall not exceed the limits specified below:

Volatile Organic Compounds	74.0 lbs/hr	146.0 tons/yr*

*Annual emissions shall be determined by purchase records of all rolling lubricants of all rolling lubricants along with performance of a material balance.

Parameter: Ensure the emission limits are not exceeded. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be as according to the monitoring and recordkeeping, for condition no. 21 of the November 14, 2001 NSR permit and as according to the RACT agreement DSE-597-87.

Condition 18 of the November 14, 2001 NSR permit:

Limitation: Emission Limits - Total emissions from the operation of the "H" mill (part of emission unit ID #005) shall not exceed the limits specified below:

Volatile Organic Compounds	58.3 lbs/hr	92.0 tons/yr*

*Annual emissions shall be determined by purchase records of all rolling lubricants along with performance of a material balance.

Parameter: Ensure the emission limits are not exceeded. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be as according to the monitoring and recordkeeping, for condition no. 21 of the November 14, 2001 NSR permit and as according to the RACT agreement DSE-597-87.

Condition 19 of the November 14, 2001 NSR permit:

Limitation: Visible emissions from the #13 and #14 (emission unit ID #031) annealing ovens afterburner shall not exceed 20 percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A). **Parameter:** Ensure opacity does not exceed 20 percent. **Monitoring and Recordkeeping:** The monitoring and recordkeeping will be as according to the following:

The emissions from the#13 and #14 (emission unit ID #031) annealing ovens afterburner shall be observed visually at least once each calendar month for at least a brief time period during normal operations to determine if they have normal visible emissions (does not include condensed water vapor/steam), unless a 40 CFR 60 Appendix A Method 9 visible emissions evaluation is performed on the emissions unit. If the emissions unit is observed having above normal visible emissions, it shall be followed up with a 40 CFR 60 Appendix A Method 9 visible emissions evaluation unless the visible emission condition is corrected as expeditiously as possible and recorded, and the cause and corrective measures taken are recorded.

<u>Permit Dated August 4, 1995</u> - The applicable requirements from the permit conditions are listed below.

1. VOC emissions from the annealing oven #21 (emission unit ID # 027) shall be controlled by a single-chamber direct flame afterburner with a 90% hydrocarbon destruction efficiency. The afterburner shall be provided with adequate access for inspection.

   (9 VAC 5-80-110 and Condition 3 of 8/4/95 Permit)

2. The approved fuel for the annealing oven #21 (emission unit ID # 027) fuel burner and afterburner is natural gas. A change in the fuel may require a permit to modify and operate.

   (9 VAC 5-80-110 and Condition 4 of 8/4/95 Permit)

3. The annual consumption of VOC in annealing oven #21 (emission unit ID # 027) shall not exceed 80.0 tons per year, calculated as the sum of each consecutive 12 month period.

   (9 VAC 5-80-110 and Condition 6 of 8/4/95 Permit)

4. The annual throughput of natural gas to the annealing oven #21 (emission unit ID # 027) fuel burner shall not exceed 144.5 million ft^3/yr, calculated as the sum of each consecutive 12 month period.

   (9 VAC 5-80-110 and Condition 7 of 8/4/95 Permit)

5. Visible emissions from annealing oven #21 (emission unit ID # 027) (fugitives), afterburner stack or fuel burner stack shall not exceed 20 percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A).

   (9 VAC 5-50-80, 9 VAC 5-80-110 and Condition 12 of 8/4/95 Permit)

6. Emissions from the annealing oven #21 (emission unit ID # 027) afterburner stack shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)	0.3 lbs/hr	1.1 tons/yr*

Volatile Organic Compounds	15.4 lbs/hr	7.6 tons/yr*

*Annual emissions shall be determined monthly as the sum of each consecutive 12 month period.

(9 VAC 5-80-110, 9 VAC 5-50-260 and Condition 9 of 8/4/95 Permit)

7. Fugitive emissions from the operation of annealing oven #21 (emission unit ID # 027) shall not exceed the limits specified below:

Volatile Organic Compounds	8.1 lbs/hr	4.0 tons/yr*

*Annual emissions shall be determined monthly as the sum of each consecutive 12 month period.

(9 VAC 5-80-110, 9 VAC 5-50-260 and Condition 10 of 8/4/95 Permit)

8. Emissions from the operation of the annealing oven #21 (emission unit ID # 027) fuel burner shall not exceed the limits specified below:

TSP/PM-10	0.2 lbs/hr	1.0 tons/yr*
Carbon Monoxide	0.6 lbs/hr	2.5 tons/yr*
Nitrogen Oxides (as NO_2)	2.3 lbs/hr	10.1 tons/yr*

*Annual emissions shall be determined monthly as the sum of each consecutive 12 month period.
(9 VAC 5-80-110, 9 VAC 5-50-260 and Condition 11 of 8/4/95 Permit)

Periodic Monitoring for the annealing oven #21 (emission unit ID #027) with associated fuel burner and a single-chamber direct flame afterburner.
The EPA periodic monitoring guidance, dated September 18, 1998, indicates on page 4 that periodic monitoring is required for each emission point at a source, subject to Title V of the Act, that is subject to an applicable requirement. The information listed below describes the periodic monitoring requirements for all of the applicable requirements for significant sources in the NSR permit issued on August 4, 1995. The requirements are generally contained in the permit issued on August 4, 1995 but some conditions have been developed to ensure that the periodic monitoring requirements of 9 VAC 5-80-110 E.2. have been met.

Condition 3 of the August 4, 1995 NSR permit:

Limitation: VOC emissions from the annealing oven #21 (emission unit ID #027) shall be controlled by a single-chamber direct flame afterburner with a 90% hydrocarbon destruction efficiency. The afterburner shall be provided with adequate access for inspection. **Parameter:** Determine if 90% of the VOC emissions are being destroyed. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be demonstrated by the monitoring and recordkeeping, for condition no. 13 b of

the August 4, 1995 NSR permit along with the following monitoring requirement to ensure the proper combustion (destruction) temperature would be maintained:

The #21 (emission unit ID # 027) annealing oven afterburner combustion zone temperature will be monitored through an alarm system located on the afterburner operation control panel which has a set point temperature of 1425^{o}F. If the temperature alarm sounds, this indicates the afterburner's combustion zone temperature is below 1425^{o}F. Records will be kept of the date and time that the temperature alarm sounds and of the immediate corrective action taken.
(9 VAC 5-80-110 E and F)

The combustion temperature is being continuously measured by the thermocouples of the combustion temperature. The following is the rational for not having periodic monitoring for the 0.5 second residence time:

It was determined the monitoring for the minimum residence time of 0.6 seconds is already being met and will continue to be met. As the South Foil Plant has submitted information stating the exhaust fan rating is 23,000 acfm at 3 ½" wc of which the afterburner was designed for a residence time of 0.6 seconds. If the speed of the fan decreases and the chamber size remains constant the residence time will only increase which will only increase the amount of time for destruction of VOCs.

In addition, the following additional periodic monitoring requirement was added to ensure this destruction efficiency would continue to be met:

An annual calibration shall be performed on the #21 (emission unit ID # 027) afterburner thermocouple for the combustion zone temperature of the afterburner in accordance with written procedures recommended by the thermocouple manufacturer. Annual records will be kept stating the date the calibration was performed along with the calibration results.
(9 VAC 5-80-110 E and F)

Condition 4 of the August 4, 1995 NSR permit:

Limitation: The approved fuel for the annealing oven #21 (emission unit ID #027) fuel burner and afterburner is natural gas. A change in the fuel may require a permit to modify and operate. **Parameter:** Determine there has been no change in fuels to possibly a dirtier fuel. **Monitoring and Recordkeeping:** The #21 (emission unit ID #027) annealing oven burner is configured to only burn natural gas. To make a change in fuel, the ovens would have to be reconfigured also.

In addition, monitoring and recordkeeping will be verified by monitoring and recordkeeping, for condition no. 7. of the August 4, 1995 NSR permit which states the following:

"The annual throughput of natural gas to the annealing oven #21 (emission unit ID # 027) fuel burner shall not exceed 144.5 million ft^{3}/yr, calculated as the sum of each consecutive 12 month period."

Condition 6 of the August 4, 1995 NSR permit:

Limitation: The annual consumption of VOC in annealing oven #21 (emission unit ID #027) shall not exceed 80.0 tons per year, calculated as the sum of each consecutive 12 month period.

Parameter: Determine the annual consumption limitation of VOCs in #21 (emission unit ID #027) annealing oven has not been exceeded and that it is calculated as the sum of each consecutive 12 month period. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be as according to the monitoring and recordkeeping, for condition no. 13 b. of the August 4, 1995 NSR permit.

Condition 7 of the August 4, 1995 NSR permit:

Limitation: The annual throughput of natural gas to the annealing oven #21 (emission unit ID #027) fuel burner shall not exceed 144.5 million ft^3/yr, calculated as the sum of each consecutive 12 month period. **Parameter:** Determine annual fuel throughput as the sum of each consecutive 12 month period. **Monitoring and Recordkeeping:** Monitoring will be performed monthly of the fuel usage and recordkeeping will be kept monthly as according to the monitoring and recordkeeping, for condition no. 13 d. of the August 4, 1995 NSR permit.

"The yearly throughput of natural gas to the annealing oven #21 (emission unit ID #027) fuel burner, calculated as the sum of each consecutive 12 month period. Condition 12 of the August 4, 1995 NSR permit:

Limitation: Visible emissions from annealing oven #21 (emission unit ID #027) (fugitives), afterburner stack or fuel burner stack shall not exceed 20 percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A). **Parameter:** Ensure the 20 percent opacity is not being exceeded. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be as according to the following:

The emissions from the annealing oven #21 (emission unit ID #027) (fugitives), afterburner stack or fuel burner stack shall be observed visually at least once each calendar month for at least a brief time period during normal operations to determine if they have normal visible emissions (does not include condensed water vapor/steam), unless a 40 CFR 60 Appendix A Method 9 visible emissions evaluation is performed on the emissions unit. If the emissions unit is observed having above normal visible emissions, it shall be followed up with a 40 CFR 60 Appendix A Method 9 visible emissions evaluation unless the visible emission condition is corrected as expeditiously as possible and recorded, and the cause and corrective measures taken are recorded.

Condition 9 of the August 4, 1995 NSR permit:

Limitation: Emissions from the annealing oven #21 (emission unit ID #027) afterburner stack shall not exceed the limits specified below:

Nitrogen Oxides (as NO_2)	0.3 lbs/hr	1.1 tons/yr*
Volatile Organic Compounds	15.4 lbs/hr	7.6 tons/yr*

*Annual emissions shall be determined monthly as the sum of each consecutive 12 month period.

Parameter: Ensure the emission limits are not being exceeded. **Monitoring and Recordkeeping:** The annual emission limits established for criteria pollutants are based on the fuel limit contained in the current NSR permit multiplied by an emission factor. Therefore, as long as the throughput limit is not violated, there is no possibility that the criteria pollutant emission limits will be violated. Recordkeeping demonstrating compliance with the throughput limit can be used to demonstrate compliance with the criteria pollutant emission limits, therefore throughput limits satisfy the periodic monitoring requirement. Monitoring and recordkeeping will be as according to the monitoring and recordkeeping, for condition nos. 6, 8, 13a., 13b., and 13c.of the August 4, 1995 NSR permit.

Condition 10 of the August 4, 1995 NSR permit:

Limitation: Fugitive emissions from the operation of annealing oven #21 (emission unit ID #027) shall not exceed the limits specified below:

Volatile Organic Compounds	8.1 lbs/hr	4.0 tons/yr*

*Annual emissions shall be determined monthly as the sum of each consecutive 12 month period.

Parameter: Ensure the emission limits are not being exceeded. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be as according to the monitoring and recordkeeping, for condition nos. 6, 13a., and 13b of the August 4, 1995 NSR permit. Monitoring evaluation was the same as for conditon no. 14 of the November 14, 2001 NSR permit for VOCs from the annealing ovens except 5% was assumed to have escaped as fugitives due to possible seal leaks and etc.

Condition 11 of the August 4, 1995 NSR permit:

Limitation: Emissions from the operation of the annealing oven #21 fuel burner shall not exceed the limits specified below:

TSP/PM-10	0.2 lbs/hr	1.0 tons/yr*
Carbon Monoxide	0.6 lbs/hr	2.5 tons/yr*
Nitrogen Oxides (as NO_2)	2.3 lbs/hr	10.1 tons/yr*

*Annual emissions shall be determined monthly as the sum of each consecutive 12 month period.

Parameter: Ensure the emission limits are not being exceeded. **Monitoring and Recordkeeping:** The annual emission limits established for criteria pollutants are based on the fuel limit contained in the current NSR permit multiplied by an emission factor. Therefore, as long as the throughput limit is not violated, there is no possibility that the criteria pollutant emission limits will be violated. Recordkeeping demonstrating compliance with the throughput limit can be used to demonstrate compliance with the criteria pollutant emission limits, therefore throughput limits satisfy the periodic monitoring requirement. Monitoring and recordkeeping will

be as according to the monitoring and recordkeeping, for condition nos. 7 and 13d. of the August 4, 1995 NSR permit.

Permit Dated November 14, 2001 - The applicable requirements from the permit conditions are listed below.

1. **Emission Controls** - Volatile organic compound (VOC) emissions from the #5 (emission unit ID # 029) Cigarette Machine shall be controlled by use of low solvent or waterborne inks and coatings. The #5 (emission unit ID # 029) Cigarette Machine shall be provided with adequate access for inspection.
   (9 VAC 5-80-110 and Condition 3 of 11/14/01 Permit)

2. **Throughput** - The throughput of VOC to the #5 (emission unit ID # 029) Cigarette Machine shall be no more than 14.25 pounds per hour. The throughput of VOC to the #5 (emission unit ID # 029) Cigarette Machine shall be no more than 13.67 tons per year, calculated as the sum of each consecutive 12 month period.
   (9 VAC 5-80-110 and Condition 4 of 11/14/01 Permit)

3. **Fuel** - The approved auxiliary fuel for the dryers is natural gas. A change in the fuel may require a permit to modify and operate.
   (9 VAC 5-80-110 and Condition 5 of 11/14/01 Permit)

4. **Emission Limits** - Emissions from the operation of the #5 (emission unit ID # 029) Cigarette Machine shall not exceed the limits specified below:

Volatile Organic Compounds	14.25 lbs/hr	342 lbs/day	13.67 tons/yr*

   *Annual emissions shall be determined monthly as the sum of each consecutive 12 month period.

   (9 VAC 5-80-110, 9 VAC 5-50-260 and Condition 6 of 11/14/01 Permit)

5. **Visible Emission Limit** - Visible emissions from the #5 (emission unit ID # 029) Cigarette Machine shall not exceed 5 percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A).
   (9 VAC 5-50-80, 9 VAC 5-80-110 and Condition 7 of the 11/14/01 Permit)

Periodic Monitoring for the No.5 (emission unit ID #029) Cigarette Machine (consisting of (1) rotogravure/coating station and (1) laminating station.

The EPA periodic monitoring guidance, dated September 18, 1998, indicates on page 4 that periodic monitoring is required for each emission point at a source, subject to Title V of the Act, that is subject to an applicable requirement. The information listed below describes the periodic monitoring requirements for all of the applicable requirements for significant sources in the NSR permit issued on November 14, 2001. The requirements are generally contained in the permit issued on November 14, 2001 but some conditions have been developed to ensure that the periodic monitoring requirements of 9 VAC 5-80-110 E.2. have been met.

Condition 3 of the November 14, 2001 NSR permit:

Limitation: Emission Controls - Volatile organic compound (VOC) emissions from the #5 (emission unit ID #029) Cigarette Machine shall be controlled by use of low solvent or waterborne inks and coatings. The #5 (emission unit ID #029) Cigarette Machine shall be provided with adequate access for inspection. **Parameter:** Determine if the #5 (emission unit ID # 029) Cigarette machine is using a solvent which is low in VOCs or waterborne inks and coatings. **Monitoring and Recordkeeping:** Monitoring may be determined by the following ***periodic monitoring*** condition:

"The DEQ may require testing to determine if compliant ink meets the definition of compliant ink contained in **9 VAC 5-40-5070** of the regulations."

Recordkeeping will be as according to the monitoring and recordkeeping, for condition no. 8 c. of the November 14, 2001 NSR permit:

"c. Record demonstrating inks used meet the definition in **9 VAC 5-40-5070** of compliant ink."

9 VAC 5-40-5070 for "**compliant ink**" states the following:

"**Compliant ink or surface coating**" means an ink or surface coating conforming to the definition of a **high-solids**, **low-volatile organic compound** or a **waterborne ink** or surface coating.

"**High-solids ink or surface coating**" means an ink or surface coating which contains 60% or more nonvolatile compounds by volume.

"**Low solvent ink or surface coating**" means an ink or surface coating which contains not more than 0.5 pounds of volatile organic compounds per pound of nonvolatile compounds and is used on a packaging rotogravure printing or flexographic printing press.

"**Waterborne ink or surface coating**" means an ink or surface coating whose volatile portion consists of 75% or more by volume of water and 25% or less by volume of volatile organic compounds.

And the additional periodic monitoring 8d. as listed below:

> Records shall be kept demonstrating the VOC content of each coating material used in the #5 (emission unit ID # 029) Cigarette Machine. Acceptable records to demonstrate VOC content shall be the use of current material safety data sheets (MSDS) or current certified product data sheets (CPDS) provided the information contained therein is determined using approved EPA test methods (e.g. 40 CFR part 60 appendix A – EPA Method 24).

Condition 4 of the November 14, 2001 NSR permit:

Limitation: Throughput -The throughput of VOC to the #5 (emission unit ID #029) Cigarette Machine shall be no more than 14.25 pounds per hour. The throughput of VOC to the #5 (emission unit ID #029) Cigarette Machine shall be no more than 13.67 tons per year, calculated as the sum of each consecutive 12 month period. **Parameter:** Determine the throughput of

VOCs to the #5 cigarette machine is not exceeding 14.25 lbs/hr and 13.67 tons/yr calculated as the sum of each consecutive 12 month period. **Monitoring and Recordkeeping:** Monitoring will be performed monthly of the throughput of VOCs and recordkeeping will be kept monthly as according to the monitoring and recordkeeping, for condition no. 8a.and 8b. of the November 14, 2001 NSR permit and the additional periodic monitoring 8d. as listed below:

> Records shall be kept demonstrating the VOC content of each coating material used in the #5 (emission unit ID # 029) Cigarette Machine. Acceptable records to demonstrate VOC content shall be the use of current material safety data sheets (MSDS) or current certified product data sheets (CPDS) provided the information contained therein is determined using approved EPA test methods (e.g. 40 CFR part 60 appendix A – EPA Method 24).

Condition 5 of the November 14, 2001 NSR permit:

Limitation: Fuel - The approved auxiliary fuel for the dryers (associated with emission unit ID #029) is natural gas. A change in the fuel may require a permit to modify and operate. **Parameter:** Determine there has been no change in fuels to possibly a dirtier fuel. **Monitoring and Recordkeeping:** The associated oven burner for No. 5 (emission unit ID #029) Cigarette Machine is configured to only burn natural gas. To make a change in fuel, the oven would have to be reconfigured.

Condition 6 of the November 14, 2001 NSR permit:

Limitation: Emission Limits - Emissions from the operation of the #5 (emission unit ID #029) Cigarette Machine shall not exceed the limits specified below:

Volatile Organic Compounds	14.25 lbs/hr	342 lbs/day	13.67 tons/yr*

*Annual emissions shall be determined monthly as the sum of each consecutive 12 month period.
Parameter: Ensure the emission limits are not being exceeded. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be as according to the monitoring and recordkeeping, for condition nos. 8a., 8b., and 8c. of the November 14, 2001 NSR permit and the additional periodic monitoring 8d. as listed below:

> Records shall be kept demonstrating the VOC content of each coating material used in the #5 (emission unit ID # 029) Cigarette Machine. Acceptable records to demonstrate VOC content shall be the use of current material safety data sheets (MSDS) or current certified product data sheets (CPDS) provided the information contained therein is determined using approved EPA test methods (e.g. 40 CFR part 60 appendix A – EPA Method 24).

Condition 7 of the November 14, 2001 NSR permit:

Limitation: Visible Emission Limit - Visible emissions from the #5 (emission unit ID #029) Cigarette Machine shall not exceed 5 percent opacity as determined by EPA Method 9 (reference

40 CFR 60, Appendix A). **Parameter:** Ensure 5% opacity is not being exceeded. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be as according to the following:

The emissions from the #5 Cigarette Machine shall be observed visually at least once each calendar month for at least a brief time period during normal operations to determine if they have any visible emissions (does not include condensed water vapor/steam), unless a 40 CFR 60 Appendix A Method 9 visible emissions evaluation is performed on the emissions unit. If the emissions unit is observed having any visible emissions, it shall be followed up with a 40 CFR 60 Appendix A Method 9 visible emissions evaluation unless the visible emission condition is corrected as expeditiously as possible and recorded, and the cause and corrective measures taken are recorded.

<u>Permit Dated November 15, 1984</u> - The applicable requirements from the permit conditions are listed below.

1. The yearly production of annealled aluminum foil shall not exceed 5,256 tons.
   (9 VAC 5-80-110, and Part I Specific Condition 4 of 11/15/84 Permit)

2. The approved fuel for the annealing oven (emission unit ID #007) burner is natural gas. A change in the fuel may require a permit to modify and operate.
   (9 VAC 5-80-110 and Part I Specific Condition 6 of 11/15/84 Permit)

3. Emissions from the operation of the annealing oven (emission unit ID #007) shall not exceed the limitations specified below:

Volatile Organic Compounds	3.9 lbs/hr	12.0 tons/yr*

   *Annual emissions shall be determined monthly as the sum of each consecutive 12 month period.

   (9 VAC 5-80-110, 9 VAC 5-50-260 and Part I Specific Condition 5 of 11/15/84 Permit)

4. Visible emissions from the annealing oven (emission unit ID #007) process shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30 percent opacity.
   (9 VAC 5-50-80 and 9 VAC 5-80-110)

Periodic Monitoring for # 22 annealing oven (emission unit ID #007) and associated natural gas burner.

The EPA periodic monitoring guidance, dated September 18, 1998, indicates on page 4 that periodic monitoring is required for each emission point at a source, subject to Title V of the Act, that is subject to an applicable requirement. The information listed below describes the periodic monitoring requirements for all of the applicable requirements for significant sources in the NSR permit issued on November 15, 1984. The requirements are generally contained in the permit issued on November 15, 1984 but some conditions have been developed to ensure that the periodic monitoring requirements of 9 VAC 5-80-110 E.2. have been met.

Condition 4 of the November 15, 1984 NSR permit:

Limitation: The yearly production of annealled aluminum foil (through emission unit ID #007) shall not exceed 5,256 tons. **Parameter:** Ensuring the yearly production of aluminum foil does not exceed 5,256 tons. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be as according to the following:

> "The permittee shall maintain records of all emission data and operating parameters necessary to demonstrated compliance with this permit. The content of and format of such records shall be arranged with the Director, Piedmont Region. These records shall include, but are not limited to:
>
> a. The yearly production of annealed aluminum foil from the #22 (emission unit ID # 007) annealing oven, calculated monthly as the sum of each consecutive twelve (12) month period.
>
> These records shall be available on site for inspection by the DEQ and shall be current for the most recent five (5) years."

Condition 5 of the November 15, 1984 NSR permit:

Limitation: Emissions from the operation of the annealing oven (emission unit ID #007) shall not exceed the limitations specified below:

Volatile Organic Compounds	3.9 lbs/hr	12.0 tons/yr*

*Annual emissions shall be determined monthly as the sum of each consecutive 12 month period.

Parameter: Ensure the emission limits are not being exceeded. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be as according to the monitoring and recordkeeping, for condition no. 4 of the November 15, 1984 NSR permit and as according to the following:

> "The permittee shall maintain records of all emission data and operating parameters necessary to demonstrated compliance with this permit. The content of and format of such records shall be arranged with the Director, Piedmont Region. These records shall include, but are not limited to:
>
> a. The yearly production of annealed aluminum foil from the #22 (emission unit ID # 007) annealing oven, calculated monthly as the sum of each consecutive twelve (12) month period.
> b. The yearly consumption of VOC in the #22 (emission unit ID #007) annealing ovens (as determined by material balance), calculated as the sum of each consecutive 12 month period.

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five (5) years."

Condition 6 of the November 15, 1984 NSR permit:

Limitation: The approved fuel for the annealing oven (emission unit ID #007) burner is natural gas. A change in the fuel may require a permit to modify and operate. **Parameter:** Determine there has been no change in fuels to possibly a dirtier fuel. **Monitoring and Recordkeeping:** The annealing oven (emission unit ID #007) burner is configured to only burn natural gas. To make a change in fuel, the ovens would have to be reconfigured also.

Limitation: Visible emissions from the annealing oven (emission unit ID #007) process shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30 percent opacity. **Parameter:** Ensure the 20 percent opacity is not being exceeded. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be as according to the following:

The emissions from the #22 (emission unit ID #007) annealing oven process shall be observed visually at least once each calendar month for at least a brief time period during normal operations to determine if they have normal visible emissions (does not include condensed water vapor/steam), unless a 40 CFR 60 Appendix A Method 9 visible emissions evaluation is performed on the emissions unit. If the emissions unit is observed having above normal visible emissions, it shall be followed up with a 40 CFR 60 Appendix A Method 9 visible emissions evaluation unless the visible emission condition is corrected as expeditiously as possible and recorded, and the cause and corrective measures taken are recorded.

<u>Permit Dated April 2, 2002</u> - The applicable requirements from the permit conditions are listed below.

1. The yearly production of annealed aluminum shall not exceed 5,256 tons per year, calculated monthly as the sum of each consecutive 12 month period.
   (9 VAC 5-80-110, and Condition 3 of 4/2/02 Permit)

2. The approved fuel for the oven (emission unit ID #023) is natural gas. A change in the fuel may require a permit to modify and operate.
   (9 VAC 5-80-110 and Condition 4 of 4/2/02 Permit)

3. Emissions from the operation of the annealing oven (emission unit ID # 023 - reference 23) shall not exceed the limitations specified below:

Volatile Organic Compounds	2.0 lbs/hr	9.0 tons/yr*

   *Annual emissions shall be determined monthly as the sum of each consecutive 12 month period.
   (9 VAC 5-80-110, 9 VAC 5-50-260 and Condition 5 of 4/2/02 Permit)

4. Visible emissions from (emission unit # 023) annealing oven shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30 percent opacity.
   (9 VAC 5-50-80 and 9 VAC 5-80-110)

Periodic Monitoring for the #23 (emission unit ID #023) annealing oven and associated natural gas burner.

The EPA periodic monitoring guidance, dated September 18, 1998, indicates on page 4 that periodic monitoring is required for each emission point at a source, subject to Title V of the Act, that is subject to an applicable requirement. The information listed below describes the periodic monitoring requirements for all of the applicable requirements for significant sources in the NSR permit issued on April 2, 2002. The requirements are generally contained in the permit issued on April 2, 2002 but some conditions have been developed to ensure that the periodic monitoring requirements of 9 VAC 5-80-110 E.2. have been met.

Condition 3 of the April 2, 2002 NSR permit:

Limitation: The production of annealed aluminum (through emission unit ID #023) shall not exceed 5,256 tons per year, calculated monthly as the sum of each consecutive 12 month period.. **Parameter:** Ensuring the yearly production of aluminum foil does not exceed 5,256 tons per year. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be as according to the following:

The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content of and format of such records shall be arranged with the Director, Piedmont Region. These records shall include, but are not limited to:

a. Annual production of annealed aluminum foil from the #23 (emission unit ID # 23) annealing oven, calculated monthly as the sum of each consecutive twelve (12) month period.

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five (5) years."
(9 VAC 5-50-50, 9 VAC 5-80-110)

Condition 4 of the April 2, 2002 NSR permit:

Limitation: The approved fuel for the oven (emission unit ID #023) is natural gas. A change in the fuel may require a permit to modify and operate. **Parameter:** Determine there has been no change in fuels to possibly a dirtier fuel. **Monitoring and Recordkeeping:** The #23 (emission unit ID #023) annealing oven burner is configured to only burn natural gas. To make a change in fuel, the ovens would have to be reconfigured also.

Condition 5 of the April 2, 2002 NSR permit:

Limitation: Emissions from the operation of the annealing oven (reference 23 –emission unit ID #023) shall not exceed the limitations specified below:

Volatile Organic Compounds	2.0 lbs/hr	9.0 tons/yr*

*Annual emissions shall be determined monthly as the sum of each consecutive 12 month period.

Parameter: Ensure the emission limits are not being exceeded. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be as according to the following:

The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content of and format of such records shall be arranged with the Director, Piedmont Region. These records shall include, but are not limited to:

a. Annual production of annealed aluminum foil from the #23 (emission unit ID # 23) annealing oven, calculated monthly as the sum of each consecutive twelve (12) month period.

b. The yearly consumption of VOC in annealing oven #23 (emission unit ID #023) (as determined by material balance), calculated as the sum of each consecutive 12 month period.

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five (5) years."

(9 VAC 5-50-50, 9 VAC 5-80-110)

Limitation: Visible emissions from emission unit # 023 annealing oven shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30 percent opacity. **Parameter:** Ensure the 20% opacity is not being exceeded along with the exception of one six-minute period in any one hour not to exceed 30 percent opacity. **Monitoring and Recordkeeping:** The emissions from the #23 (emission unit ID #023) annealing oven process shall be observed visually at least once each calendar month for at least a brief time period during normal operations to determine if they have normal visible emissions (does not include condensed water vapor/steam), unless a 40 CFR 60 Appendix A Method 9 visible emissions evaluation is performed on the emissions unit. If the emissions unit is observed having above normal visible emissions, it shall be followed up with a 40 CFR 60 Appendix A Method 9 visible emissions evaluation unless the visible emission condition is corrected as expeditiously as possible and recorded, and the cause and corrective measures taken are recorded.

RACT DSE-597-87

Limitations

All limitations shall be conducted as outlined in the RACT Order DSE-597-87 (**Attachment A** of this permit) except where the Title V permit is more restrictive than the applicable limitation, the limitations shall then be conducted as outlined in the Title V permit.

Section E (of RACT Order DSE-597-87): Agreement and Order

E.2 RACT for the control of VOC emissions from the affected facilities shall be defined as the use of a normal paraffin lubricant containing a minimum of 88 percent saturated aliphatic compounds of carbon range C12 and above.

E.4. **RACT compliance for the affected facilities shall be demonstrated by an analysis complying with the specifications of Item 2, Section E of a grab lubricant sample from any mill in operation at the time of sampling.** Gas chromatography is an acceptable procedure by which the analysis may be performed. Grab samples may be taken and analyzed by the Board or EPA.

E.6. ALCOA shall also maintain records to demonstrate compliance with Item 3, Section E of this Order and the records shall be made available to the Board Region V office (now called Piedmont Regional Office) upon request. **Reynolds shall purchase only normal paraffin lubricants for use as a rolling lubricant as defined by this order.** Reynolds shall maintain records of the lubricant purchases. Reynolds shall perform analyses of the as-applied lubricant monthly and maintain records.

(Item 3, Section E (E.3.) states the following:

Beginning no later than May 1, 1988, the affected facilities shall comply with RACT as defined in this Order.)

E.7. **The temperature of the normal paraffin lubricant for the affected facilities shall be controlled and regulated to a maximum of 150^{o}F in the lubricant spray manifold at each mill** and records kept and made available upon request to the Board Region V office (now called Piedmont Regional Office) to demonstrate compliance with this requirement. **Reynolds shall measure** and record **the lubricant temperature at each mill, as a minimum, daily.**

Monitoring and Recordkeeping

All monitoring and recordkeeping shall be conducted as outlined in the RACT Order DSE-597-87 (**Attachment A** of this permit) except where the Title V permit is more restrictive than the applicable monitoring and recordkeeping, the monitoring and recordkeeping shall then be conducted as outlined in the Title V permit.

Section E (of RACT Order DSE-597-87): Agreement and Order

E.4. **RACT compliance** for the affected facilities shall be demonstrated by an analysis complying **with the specifications of Item 2, Section E of a grab**

lubricant sample from any mill in operation at the time of sampling. Gas chromatography is an acceptable procedure by which the analysis may be performed. Grab samples may be taken and analyzed by the Board or EPA.

E.6. **ALCOA shall also maintain records to demonstrate compliance with Item 3, Section E of this Order and the records shall be made available to the Board Region V office (now called Piedmont Regional Office) upon request.** Reynolds shall purchase only normal paraffin lubricants for use as a rolling lubricant as defined by this order. **Reynolds shall maintain records of the lubricant purchases. Reynolds shall perform analyses of the as-applied lubricant monthly and maintain records.**

(Item 3, Section E (E.3.) states the following:

Beginning no later than May 1, 1988, the affected facilities shall comply with RACT as defined in this Order.)

E.7. The temperature of the normal paraffin lubricant for the affected facilities shall be controlled and regulated to a maximum of 150^{o}F in the lubricant spray manifold at each mill and **records kept and made available upon request to the Board Region V office (now called Piedmont Regional Office) to demonstrate compliance with this requirement. Reynolds shall measure and record the lubricant temperature at each mill, as a minimum, daily.**

No discussion of the "limitations, parameters, monitoring, recordkeeping, and reporting" was performed as the RACT was submitted for public comment before it was issued and is considered part of the State of Virginia's SIP which has to be approved by EPA.

RACT DSE-414A-86

Limitations

All limitations shall be conducted as outlined in the RACT Order DSE-414A-86 (**Attachment B** of this permit) except where the Title V permit is more restrictive than the applicable limitation, the limitations shall then be conducted as outlined in the Title V permit.

Section E (of RACT Order DSE-414A-86): Agreement and Order

E.2 In SIP Order DSE-412A-86 for the Foil Plant Section E, Conditions 2, 3, 4, the facilities subject to this Order are designated and the RACT emission limits are specified. Reynolds agrees to meet, or as appropriate continue to meet, the requirements set in DSE-412A-86 for the specified equipment, except any station on coloring machines 1, 2, and 6 In-Line Machine 24 when it is not running low solvent technology, beginning on September 1, 1986.

Monitoring and Recordkeeping

All monitoring and recordkeeping shall be conducted as outlined in the RACT Order DSE-414A-86 (**Attachment B** of this permit) except where the Title V permit is more restrictive than the applicable monitoring and recordkeeping, the monitoring and recordkeeping shall then be conducted as outlined in the Title V permit.

No discussion of the "limitations, parameters, monitoring, recordkeeping, and reporting" was performed as the RACT was submitted for public comment before it was issued and is considered part of the State of Virginia's SIP which has to be approved by EPA.

However, concerning the recordkeeping in RACT DSE-412A-86 and in RACT DSE-414A-86, it was surmised the "Daily VOC Model" should contain all of the information that is required under AQP-4 as these RACTs were designed to meet the VOC standard under Article 36 (or Rule 4-36) in the State's Regulations. Article 36 is the emission standards for Flexographic, Packaging Rotogravure, and Publication Rotogravure Printing Lines. The air quality policies and procedures (Procedures for maintaining records for surface coating operations and graphic arts printing processes (AQP-4)) states the following:

"These procedures are to be used for maintaining records for existing surface coating operations and graphics arts printing processes subject to the emission standards prescribed under Rules 4-26 through **4-36** of the regulations and any new or modified source subject to any volatile organic compound emission standard for a coating operation or printing process prescribed pursuant to Part VIII of the regulations."

RACT DSE-412A-86

Limitations

All limitations shall be conducted as outlined in the RACT Order DSE-412A-86 (**Attachment C** of this permit) except where the Title V permit is more restrictive than the applicable limitation, the limitations shall then be conducted as outlined in the Title V permit.

Section E (of RACT Order DSE-412A-86): Agreement and Order

E.3 The facilities at the Plant which are subject to this Order are: Cigarette machines Nos. 1, and 23; Reyseal machines Nos. 2, 3, 4 and 5. In addition, any station on coloring machines either 1, 2, 6 or in-line machine No. 24 which is not being exhausted to the incinerator shall be subject to the requirements of Conditions 4 and 5.

E.4 The reduction in volatile organic compound emissions from the affected facilities at the Plant shall not be less than sixty-five (65) percent, by weight on a daily basis over the historical amount of solvent used to apply the same amount of solids.

Across line averaging of emission reductions will be utilized to determine compliance with the specified daily emission reduction requirement.

E.5 Compliance with requirements of Condition 3 and 4 will be determined by the use of a "Daily VOC Model". The model will calculate daily emission reductions

by comparing actual solvent usings to the historical amount of solvent material which would have been used. The model will calculate daily emissions by measuring, on a job basis, all VOC bearing materials consumed. Total job usings shall be apportioned to individual days based on production records. The daily historical amount of solvent which would have been used shall be calculated by factors relating the daily amount of applied solids and the historical amount of solvent required to apply a pound of solids. The historical factors and compliance calculations are shown in Attachment A (of RACT order DSE-412A-86).

E.6 Records consisting of information as to the calculated daily reduction in emissions of volatile organic compounds from the affected facilities, except those emissions treated by add-on control equipment at the Plant, shall be kept available at the Plant for at least a two year time period. Reynolds shall provide the Board an exception report at the end of any quarter when the conditions of Section E, Condition 2, 3 and 4 of this Order DSE-412A-86 are not met.

Monitoring and Recordkeeping

Section E (of RACT Order DSE-412A-86): Agreement and Order

All monitoring and recordkeeping shall be conducted as outlined in the RACT Order DSE-412A-86 (**Attachment C** of this permit) except where the Title V permit is more restrictive than the applicable monitoring and recordkeeping, the monitoring and recordkeeping shall then be conducted as outlined in the Title V permit.

E.4 The reduction in volatile organic compound emissions from the affected facilities at the Plant shall not be less than sixty-five (65) percent, by weight on a daily basis over the historical amount of solvent used to apply the same amount of solids.

Across line averaging of emission reductions will be utilized to determine compliance with the specified daily emission reduction requirement.

E.5 Compliance with requirements of Condition 3 and 4 will be determined by the use of a “Daily VOC Model”. The model will calculate daily emission reductions by comparing actual solvent usings to the historical amount of solvent material which would have been used. The model will calculate daily emissions by measuring, on a job basis, all VOC bearing materials consumed. Total job usings shall be apportioned to individual days based on production records. The daily historical amount of solvent which would have been used shall be calculated by factors relating the daily amount of applied solids and the historical amount of solvent required to apply a pound of solids. The historical factors and compliance calculations are shown in Attachment A (of RACT order DSE-412A-86).

E.6 **Records consisting of information as to the calculated daily reduction in emissions of volatile organic compounds from the affected facilities, except those emissions treated by add-on control equipment at the Plant,**

shall be kept available at the Plant for at least a two year time period. Reynolds shall provide the Board an exception report at the end of any quarter when the conditions of Section E, Condition 2, 3 and 4 of this Order DSE-412A-86 are not met.

Reporting

Section E (of RACT Order DSE-412A-86): Agreement and Order

All reporting shall be conducted as outlined in the RACT Order DSE-412A-86 (**Attachment C** of this permit) except where the Title V permit is more restrictive than the applicable reporting, the reporting shall then be conducted as outlined in the Title V permit.

E.6 Records consisting of information as to the calculated daily reduction in emissions of volatile organic compounds from the affected facilities, except those emissions treated by add-on control equipment at the Plant, shall be kept available at the Plant for at least a two year time period. **Reynolds shall provide the Board an exception report at the end of any quarter when the conditions of Section E, Condition 2, 3 and 4 of this Order DSE-412A-86 are not met.**

No discussion of the "limitations, parameters, monitoring, recordkeeping, and reporting" was performed as the RACT was submitted for public comment before it was issued and is considered part of the State of Virginia's SIP which has to be approved by EPA.

However, concerning the recordkeeping in RACT DSE-412A-86 and in RACT DSE-414A-86, it was surmised the "Daily VOC Model" should contain all of the information that is required under AQP-4 as these RACTs were designed to meet the VOC standard under Article 36 (or Rule 4-36) in the State's Regulations. Article 36 (or Rule 4-36) is the emission standards for Flexographic, Packaging Rotogravure, and Publication Rotogravure Printing Lines. The air quality program policies and procedures (Procedures for maintaining records for surface coating operations and graphic arts printing processes (AQP-4)) states the following:

"These procedures are to be used for maintaining records for existing surface coating operations and graphics arts printing processes subject to the emission standards prescribed under Rules 4-26 through **4-36** of the regulations and any new or modified source subject to any volatile organic compound emission standard for a coating operation or printing process prescribed pursuant to Part VIII of the regulations."

Permit Dated April 2, 2002 - The applicable requirements from the permit conditions are listed below.

1. Volatile Organic Compound emissions from the wax laminator (emission unit ID # 026) coatings shall be controlled by limiting the volatile portion of each coating to a maximum of 25 percent by volume of volatile organic compounds.

   (9 VAC 5-80-110 and Condition 3 of 4/2/02 Permit)

2. Volatile Organic Compound throughput through the wax laminator (emission unit ID # 026) shall not exceed 240.0 pounds per hour nor shall it exceed 9.5 tons per year, calculated monthly as the sum of each consecutive 12 month period.

   (9 VAC 5-80-110 and Condition 4 of 4/2/02 Permit)

3. Visible emissions from the wax laminator (emission unit ID # 026) shall not exceed 5 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30 percent opacity as determined by the EPA method 9 (reference 40 CFR 60, appendix A).

   (9 VAC 5-50-80, 9 VAC 5-80-110 and Condition 6 of 4/2/02 Permit)

4. Emissions from the operation of the wax laminator (emission unit ID # 026) shall not exceed the limitations specified below:

Volatile Organic Compounds	240.0 lbs/hr	9.5 tons/yr*

   *Annual emissions shall be determined monthly as the sum of each consecutive 12 month period.

   (9 VAC 5-80-110, 9 VAC 5-50-260, and Condition 5 of 4/2/02 Permit)

Periodic Monitoring for the (emission unit ID #026) GENIK WL-C Wax Laminator.

The EPA periodic monitoring guidance, dated September 18, 1998, indicates on page 4 that periodic monitoring is required for each emission point at a source, subject to Title V of the Act, that is subject to an applicable requirement. The information listed below describes the periodic monitoring requirements for all of the applicable requirements for significant sources in the NSR permit issued on April 2, 2002. The requirements are generally contained in the permit issued on April 2, 2002 but some conditions have been developed to ensure that the periodic monitoring requirements of 9 VAC 5-80-110 E.2. have been met.

Condition 3 of the April 2, 2002 NSR permit:

Limitation: Volatile Organic Compound emissions from the (emission unit ID #026) wax laminator coatings shall be controlled by limiting the volatile portion of each coating to a maximum of 25 percent by volume of volatile organic compounds. **Parameter:** Ensure that the (emission unit ID #026) wax laminator coatings do not exceed 25 percent by volume of volatile organic compounds. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be as according to the monitoring and recordkeeping, for condition no. 7 of the April 2, 2002 NSR permit and as according to the following:
"Records shall be kept demonstrating the VOC content of each coating material used in the (emission unit ID #026) Reyseal Machine #1 (mfg. by Genik) which shall include the percent by volume of volatile organic compounds. Acceptable records to demonstrate VOC content shall be the use of current material safety sheets (MSDS) or current certified product data sheets (CPDS) provided the information contained therein is determined using approved EPA test methods (e.g. 40 CFR part 60 appendix A – EPA Method 24)."

Condition 4 of the April 2, 2002 NSR permit:

Limitation: Volatile Organic Compound throughput through the (emission unit ID #026) wax laminator shall not exceed 240.0 pounds per hour nor shall it exceed 9.5 tons per year, calculated monthly as the sum of each consecutive 12 month period. **Parameter:** Determine that the volatile organic compound hourly and annual throughput through the (emission unit ID #026) wax laminator does not exceed 240.pounds per hour nor does it exceed 9.5 tons per year. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be as according to the monitoring and recordkeeping, for condition no. 7 of the April 2, 2002 NSR permit and as according to the following:

"Annual throughput of Volatile Organic Compound through the wax laminator (emission unit ID # 026), calculated monthly as the sum of each consecutive 12 month period.

Condition 5 of the April 2, 2002 NSR permit:

Limitation: Emissions from the operation of the wax laminator (emission unit ID #026) shall not exceed the limitations specified below:

Volatile Organic Compounds	240.0 lbs/hr	9.5 tons/yr

Parameter: Ensure the emissions limits are not being exceeded. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be as according to the monitoring and recordkeeping, for condition no. 7 of the April 2, 2002 NSR permit and as according to the following:

Condition no. 7 of the April 2, 2002 NSR permit:

> **On Site Records** - The permittee shall maintain records of emissions data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Piedmont Region. These records shall include, but are not limited to:
>
> a. A coating-by-coating monthly material balance of all coatings used. Annual throughputs shall be calculated monthly as the sum of each consecutive 12 month period.
>
> These records shall be available for inspection by the DEQ and shall be current for the most recent five years.
> (9 VAC 5-50-50, 9 VAC 5-80-110 and Condition 7 of 4/2/02 Permit)
>
> and

The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content of and format of such records shall be arranged with the Director, Piedmont Region. These records shall include, but are not limited to:

b. Records shall be kept demonstrating the VOC content of each coating material used in the (emission unit ID # 026) Reyseal Machine #1 (mfg. by Genik) which shall include the percent by volume of volatile organic compounds. Acceptable records to demonstrate VOC content shall be the use of current material safety data sheets (MSDS) or current certified product data sheets (CPDS) provided the information contained therein is determined using approved EPA test methods (e.g. 40 CFR part 60 appendix A – EPA Method 24).

c. Annual throughput of Volatile Organic Compound through the (emission unit ID # 026) wax laminator, calculated monthly as the sum of each consecutive 12 month period.

d. **Daily records demonstrating compliance with the requirements in Air Quality Program Policies and Procedures, Number AQP-4 (See B.1.a. of monitoring and recordkeeping for #5 cigarette machine (emission unit ID #029) as per Title V permit), Procedures for Maintaining Records for Surface Coating Operations and Graphic Arts Printing Processes).**

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five (5) years.
(9 VAC 5-50-50, 9 VAC 5-80-110)

Condition 6 of the April 2, 2002 NSR permit:

Limitation: Visible emissions from the wax laminator (emission unit ID #026) shall not exceed 5 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30 percent opacity as determined by the EPA Method 9 (reference 40 CFR 60, Appendix A). A visible emission evaluation shall be conducted on the wax laminator (emission unit ID #026). **Parameter:** Ensure the opacity is not being exceeded. **Monitoring and Recordkeeping:** Monitoring and recordkeeping will be as according to the following:

The emissions from the wax laminator (emission unit ID #026) shall be observed visually at least once each calendar month for at least a brief time period during normal operations to determine if they have any visible emissions (does not include condensed water vapor/steam), unless a 40 CFR 60 Appendix A Method 9 visible emissions evaluation is performed on the emissions unit. If the emissions unit is observed having any visible emissions, it shall be followed up with a 40 CFR 60 Appendix A Method 9 visible emissions evaluation unless the visible emission condition is corrected as expeditiously as possible and recorded, and the cause and corrective measures taken are recorded.

Compliance with Hourly Emission Limitations:

The hourly emission limits in the NSR permits were established based on the worst case scenario of the emission units and/or operating at their maximum rated capacity on an hourly basis. Therefore, if each of the emission units are operated at their maximum rated capacity and/or worst case scenario (and not beyond each of the emission units's maximum rated capacities), or below, there should not be a violation of the hourly emission rates. In addition, the daily recordkeeping per line (inclusive of hours of operation per day) as per AQP-4 recordkeeping requirements for emission units which are subject to the State's Regulations of Article 4-36 for "Flexographic, Packaging Rotogravure, and Publication Rotogravure Printing Lines will verify ALCOA's – South Foil Plant is in compliance with their hourly emission limits, daily emission limits and annual emission limits for the respective emission units.

In addition, the opacity standards/limitations will help to ensure the hourly emission limitations are being met. The source will be required to log the appearance of the vented emissions from the various operations and institute corrective action when visible emissions exist. Depending on whether the corrective action is successful the source will be required to perform a method 9 to demonstrate compliance or to log the corrective action taken and return to the weekly monitoring of emissions opacity.

40 CFR 60 NSPS Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984

Applicability

ALCOA – South Foil Plant's two wax storage tanks (emission unit ID No. I12 – Wax 1 & Wax 2) are no longer applicable to Subpart Kb of 40 CFR part 60 as the tanks were constructed after July 23, 1984 which is the applicability date (Tanks were installed on March 1, 1992).

40 CFR 63 NSPS Subpart KK - National Emission Standards for the Printing and Publishing Industry

Applicability

Subpart KK states the following concerning applicability:

"(a) The provision of this subpart apply to:

(1) Each new and existing facility that is a major source of hazardous air pollutants (HAPs) as defined in 40 CFR 63.2 at which publication rotogravure, or wide-web flexographic printing presses are operated,"

Reynolds Metals currently uses and emits HAPs at levels above the major source levels or threshold of HAPs of 10 tons/yr of a single HAP and 25 tons/yr of an aggregate of HAPs. Conditions concerning major source requirements were inserted into the Title V permit as attachment D to ensure ALCOA – South Foil Plant is in compliance with Subpart KK of 40 CFR 63.

Obsolete conditions from permits that can be removed

The Part 70 regulations (condition 11 of the August 31, 2001 permit, condition 23 of the November 14, 2001 permit, condition 15 of the August 4, 1995 permit, condition 9 of the November 14, 2001 permit, condition 9 of the April 2, 2002 permit for the (ref. no. 23) annealing oven, condition 9 of the April 2, 2002 permit for the GENIK WL-C wax laminator) define specific inspection and entry requirements consistent with the issuance of a TITLE V permit. These requirements are described in XIX. general condition Q. of the Title V permit and are at least as stringent as the NSR requirements. Inclusion of these conditions would be redundant and the requirements have been overtaken by the Title V (Part 70) regulations.

Condition 17 of the August 31, 2001 permit, condition 27 of the November 14, 2001 permit, condition 19 of the August 4, 1995 permit, Condition 12 of the November 14, 2001 permit, condition 13 of the October 4, 1991 permit, condition 13 of the April 2, 2002 permit for the GENIK WL-C wax laminator, condition 13 of the April 2, 2002 permit for the (ref. no. 23) annealing oven and Part II general condition 12 of the November 15, 1984 permit is not being included as an applicable requirement in the Title V permit because it is redundant. The general applicable requirement condition XIX.T.2. describes the requirements for transfer of ownership relative to the Title V permit. The transfer of ownership requirements for the NSR permit are therefore inappropriate for inclusion in the Title V permit.

Condition 10 of the November 14, 2001 permit for the No. 5 Cigarette Machine (emission unit 029), condition 16 of the August 4, 1995 permit, condition 12 of the August 31, 2001 permit, Condition 24 of the November 14, 2001 permit, condition 9 of the November 15, 1984 permit, condition 10 of the April 2, 2002 permit for the GENIK WL-C wax laminator, and condition 10 of the April 2, 2002 permit for the (ref. no. 23) annealing oven is not being included as an applicable requirement in the Title V permit because it is redundant. The general applicable requirement condition XIX.F. describes the requirements for failure/malfunction reporting relative to the Title V permit. The failure/malfunction reporting requirements for the NSR permit are therefore inappropriate for inclusion in the Title V permit.

The entire list of conditions from the August 31, 2001 permit for the trial printing on the Emissions Unit ID 24 permit has been removed because the permit was revoked in July of 2003.

Generally Applicable Requirements - Certain conditions within existing NSR permits may be applicable to all newly constructed or modified equipment that receive a permit. Below is a listing of these conditions:

1. **Testing/Monitoring Ports** – The permitted facility shall be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. Test ports shall be provided when requested.
(9 VAC 5-50-30 F, Condition no. 22 of the NSR permit issued on 11/14/01, Condition no. 5 of the NSR permit issued on 8/4/95, Condition no. 8 of the April 2, 2002 NSR permit for the GENIK WL-C wax laminator, Part II, general condition no. 8 of the April 2, 2002 NSR permit for the annealing oven (ref. no. 23), Part I, specific condition no. 7 and Part II, general condition no. 5 of the 11/15/84 NSR permit)

2. **Facility or Control Equipment Malfunction – Hazardous Air Pollutant Processes** - The process listed below shall, upon request of the Department, shut down immediately if its emissions increase in any amount because of a bypass, malfunction, shutdown or failure of the process or its associated air pollution control equipment. The process shall not return to operation until it and the associated air pollution control equipment are able to operate in the proper manner.

   (9 VAC 5-20-180 F 3)

3. In order to minimize the duration and frequency of excess emissions due to malfunctions of process equipment or air pollution control equipment, the permittee shall:

   a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance. These records shall be maintained on site for a period of five (5) years and shall be made available to DEQ personnel upon request.

   b. Maintain an inventory of spare parts that are needed to minimize durations of air pollution control equipment breakdowns.

   (Section 120-02-11 of State Regulations, Condition no. 29 of the NSR permit issued on 8/4/95)

4. The permittee shall have available written operating procedures for the related air pollution control equipment. Operators shall be trained in the proper operation of all such equipment and shall be familiar with the written operating procedures. These procedures shall be based on the manufacturer's recommendations, at minimum. The permittee shall maintain records of training provided including names of trainees, date of training and nature of training.
   (Section 120-02-11 of State Regulations, Condition no. 30 of the NSR permit issued on 8/4/95)

5. **Maintenance/Operating Procedures** - The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment, monitoring devices, and process equipment which affect such emissions:

   a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.

   b. Maintain an inventory of spare parts.

   c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.

   d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.
(9 VAC 5-50-20 E, Condition nos. 15 and 25, of the NSR permits issued on 8/31/01 and 11/14/01)

6. **Violation of Ambient Air Quality Standard** - The permittee shall, upon request of the DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated.
(9 VAC 5-80-110 and Condition 14 of 8/31/01 Permit)

7, **Registration/Update** - Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by the DEQ or the Board for information to include, as appropriate: process and production data; changes in control equipment, and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact. The availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.1-340 through 2.1-348 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board), and 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.
(9 VAC 5-170-60, 9 VAC 5-20-160, and ***Section 120-02-31*** Condition nos. 28, 20, 13, 18, 14 and 14 (respectively) of the NSR permits issued on 11/14/01 (for the modification of the #13 and #14 annealing ovens and construction of the "L" rolling mill), 8/4/95, 11/14/01 (for the construction of the #5 cigarette Machine), 8/31/01, 4/2/02 for the GENIK WL-C wax laminator and 4/2/02 for the annealing oven (ref. no. 23))

8. **Permit Copy** - A copy of this permit shall be maintained on the premises of the facility to which it applies.
(9 VAC 5-170-160 (formerly Section 120-02-11), Condition nos. 29, 21, 14, 19, 15 and 15 (respectively), of NSR permit issued on 11/14/01 (for the modification of the #13 and #14 annealing ovens and construction of the "L" rolling mill), 8/4/95, 11/14/01 (for the construction of the #5 cigarette Machine), 8/31/01, 4/2/02 for the GENIK WL-C wax laminator and 4/2/02 for the annealing oven (ref. no. 23))

These conditions are being retained in the Title V permit because 1) they are applicable requirements generally applied to all modified and newly constructed equipment permitted through the minor NSR permit program; 2) they have an impact on the prevention of excess emissions and therefore are not environmentally insignificant; and 3) they require recordkeeping and reporting that may be included in periodic monitoring requirements.

Standard Terms and Conditions

Facility Wide Conditions and Permit Terms

New source standard for visible emissions applies to all new sources which never received a permit due to them being exempt from permitting or a new source

which did not receive a specified visible emissions condition in their permit. A new source is defined as the following:

"Means any stationary source (or portion of it), the construction or relocation of which commenced on or after March 17, 1972; and any stationary source (or portion of it), the reconstruction of which commenced on or after December 10, 1976."

The existing source standard for visible emissions applies to all existing sources (grandfathered sources). An existing source is defined as the following:

"Means any stationary source other than a new source or modified source."

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

Comments on General Conditions

B. Permit Expiration

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.1-20.01:2 and §10.1-1185 of the *Code of Virginia,* and the "Department of Environmental Quality Agency Policy Statement No. 2-2003".

This general condition cite(s) the Article(s) that follow(s):
Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80. Federal Operating Permits for Stationary Sources

This general condition cites the sections that follow:
9 VAC 5-80-80. Application
9 VAC 5-80-140. Permit Shield
9 VAC 5-80-150. Action on Permit Applications

F. Failure/Malfunction Reporting

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

J. Permit Modification

This general condition cites the sections that follow:
9 VAC 5-80-50. Applicability, Federal Operating Permit For Stationary Sources
9 VAC 5-80-190. Changes to Permits.
9 VAC 5-80-260. Enforcement.
9 VAC 5-80-1100. Applicability, Permits For New and Modified Stationary Sources

U. Malfunction as an Affirmative Defense

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation see the comments on general condition F.

This general condition cites the sections that follow:
9 VAC 5-20-180. Facility and Control Equipment Maintenance or Malfunction
9 VAC 5-80-110. Permit Content

Future Applicable Requirements – NA

Inapplicable Requirements -

The **emission standards for fuel burning equipment** of the state regulations are not applicable to the **annealing ovens** as the definition of "fuel burning equipment" states the following:

Means any furnace, with fuel burning equipment appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat to be utilized by **indirect heat transfer**, or by indirect production of power. This includes….

The non-electric annealing ovens have a **direct flame** therefore making the regulation not applicable to the ovens.

The *emission standards for woodworking operations* of the state regulations is not applicable to the *dust collector on shaper in carpenter shop* as the standard of 0.05 grains per standard cubic feet of exhaust gas applies to a stack or a vent which is emitted into the ambient air and not to fugitive emissions. The source's emissions are vented into the building so the only possible emissions to the ambient air may be through doors or windows. As a result, this source would still be considered as an insignificant source as ALCOA reported in their Title V permit application. Reynolds Metals indicated it is an insignificant source on the basis of emissions levels (i.e. uncontrolled emissions < 5 tons/yr of particulate matter (PM_{10})).

The three 7,500 gallon tanks, eight 10,000 gallon tanks, three 200 gallon tanks, and two 12,500 gallon tanks, (**Tank I.D. Nos.: AST #B1, D1 – D11, AST #D12 – D14, and Wax 1 and Wax 2), (Insignificant Emission Units ID Nos.: I11 and I13, Significant Emission Unit ID No.: I12**) are not subject to the State's Rule 4-25 (**emission standards for VOC**

and transfer operations). The reason this rule is inapplicable is the source states the source uses VOC's with a vapor pressure < 1.5 PSIA under actual storage and filling conditions.

The three 2,000 gallon tanks (Tank ID Nos.: AST# E1-E3 – Insignificant Emission Unit ID # I14) are not subject to the State's Rule 4-25 as the storage tanks are at the storage capacity exemption level of 2,000 gals.

COMPLIANCE PLAN – N/A

INSIGNIFICANT EMISSION UNITS

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
I01	Aqueous Parts Cleaner in C Building Maintenance Area	9 VAC 5-80-720 A24		
I02	Scrap Balers and Briquetters	9 VAC 5-80-720 B1	PM	
I03	Trim Handling System for Mills, Slitters, Separators, Sheet cutters	9 VAC 5-80-720 B1	PM	
I04	Core Cutting	9 VAC 5-80-720 B1	PM	
I05	Dust Collector on Shaper in Carpenter Shop	9 VAC 5-80-720 B1	PM	
I06	Metal Scrap Saw Station	9 VAC 5-80-720 B1	PM	
I07	Oil Water Separators (3)	9 VAC 5-80-720 B2	VOC	
I08	Paint Shop Ventilation Hood	9 VAC 5-80-720 B2	VOC	
I09	Four Non-Halogenated Solvent Parts Washers in Maintenance Areas	9 VAC 5-80-720 B2	VOC	
I10	Steam Cabinets	9 VAC 5-80-720 B2	VOC	

I11	Storage Tanks – AST #B1 & D1 – D11, three 7,500 gallon tanks, eight 10,000 gallon tanks	9 VAC 5-80-720 B2	VOC	
I13	Storage Tanks – AST #D12 – D14. Three 200 gallon tanks	9 VAC 5-80-720 C3	VOC	200 gallons
I14	Storage Tanks – AST #E1 – E3	9 VAC 5-80-720 B2	VOC	
I15	Natural Gas Burners Associated with Presses Laminators, Annealing ovens and oxidizers (16) 0.15 MMBtu/hr (4) 0.25 MMBtu/hr (24) 0.30 MMBtu/hr (48) 0.33 MMBtu/hr (6) 0.40 MMBtu/hr (36) 0.50 MMBtu/hr (2) 0.53 MMBtu/hr (12) 0.67 MMBtu/hr (1) 0.90 MMBtu/hr (5) 1.00 MMBtu/hr (1) 1.20 MMBtu/hr (18) 1.25 MMBtu/hr (1) 1.50 MMBtu/hr (4) 1.60 MMBtu/hr (3) 2.00 MMBtu/hr (1) 3.00 MMBtu/hr (7) 4.00 MMBtu/hr	9 VAC 5-80-720 B1 & B2	PM, SO2, NOx, CO, VOC	
I16	Portable Waste Oil Tanks	9 VAC 5-80-720 B2	VOC	500 and 1000 gallons
I17	Boiler room oil feed tank	9 VAC 5-80-720 B2	VOC	App. 400 gallons
I18	Schneider filters	9 VAC 5-80-720 B2	VOC	
I19	Rosedale filters	9 VAC 5-80-720 B2	VOC	
I20	Filtertech Vacuum System	9 VAC 5-80-720 B2	VOC	

I21	Roll Grinders (5)	9 VAC 5-80-720 B1 & B2	VOC & PM	

These emission units are presumed to be in compliance with all requirements of the federal Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping, or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Compliance Assurance Monitoring (CAM)

Coloring Machines 1, 2, and 6, and Glue Mounter #24 are exempt from the rule (CAM) since they are part of the SIP-approved RACT emissions trading group at Richmond Foil Plant. This exemption is allowed under § 64.2 (b)(1)(iv) which states the following:

"Emission limitations or standards or other applicable requirements that apply solely under an emissions trading program approved or promulgated by the Administrator under the Act that allows for trading emissions within a source or between sources."

Annealing Furnaces #13, #14, and #21, these units have pre-control emissions of less than 100 tons/yr of VOCs and are therefore exempt per § 64.2 (a)(3).

The Busch Purifier unit at the "L" Foil Rolling Mill is not subject to CAM on the initial issuance of the Title V permit for the following reasons:

CAM is not presently applicable to the emissions unit which is connected to the Busch purifier. Based on the following information from an engineering analysis dated 6/2/78 performed for the original permit issued 10/5/78:

Emission Estimate – "L" Mill

	#/hr		T/y	
	Uncont.	Cont.	Uncont.	Cont.
Particulate HC	18.9	1.9	37.3	3.75
Gaseous HC	72.1		142.1	
Total	91.0	74.0	179.4	145.85

Based on the above information and on the following information from DEQ's Memo 01-1001, Chapter 9 Compliance Assurance Monitoring Guidance Appendix W:

"For example, an emissions unit might be major for both SO2 and CO before control and use a control device (or devices) to control emissions of both pollutants. However, if there were no applicable requirement requiring CO control while an applicable requirement required an add-on control device for SO2, the unit would be a "large" PSEU for SO2 and a PSEU not subject to CAM for CO. Therefore the emissions unit's SO2 controls would be subject to CAM. However, the control device for CO emissions from the unit would not be subject to CAM."

The following condition (condition #4 of the November 14, 2001 NSR permit) does require control for **particulate** VOC but not for the gaseous VOC:

"Particulate volatile organic compound (VOC) emissions (mist) at the "L" mill shall be controlled by an inertial impactor designed to collect 90% of the hydrocarbon droplets."

The following condition (condition # 17 of the November 14, 2001 NSR permit) does limit VOC emissions of which should have been broken out between VOCs and particulate :

"Total emissions from the operation of the "L" mill shall not exceed the limits specified below:

Volatile Organic Compounds	74.0 lbs/hr	146.0 tons/yr

(9 VAC 5-50-260)

However, as stated previously from the June 2, 1978 engineering analysis, 142.1 tons/yr is the gaseous hydrocarbons (VOCs) and the remaining emissions is particulate hydrocarbon (particulate mist) of which is what is being controlled by the inertial impactor and not the VOCs. There is no requirement to have add on control equipment for the VOCs to meet the emission limit for VOCs. Also, the particulate is below 100 tons/yr both uncontrolled and controlled. Based on this information, the Busch Purifier unit (inertial impactor) is not subject to CAM for particulate and it is not subject to CAM for VOCs as it does not control VOCs and no add on control equipment is required to control VOCs.

CONFIDENTIAL INFORMATION

PUBLIC PARTICIPATION

The proposed permit was placed on public notice in the Richmond Times Dispatch from April 13, 2007 to May 29, 2007 (at the close of business day). No comments were received.